











# AMERICAN PRACTICE OF MEDICINE;

BEING

## A T R E A T I S E

ON THE

CHARACTER, CAUSES, SYMPTOMS, MORBID APPEARANCES,

AND

## T R E A T M E N T

OF THE

DISEASES OF MEN, WOMEN, AND CHILDREN,

OF ALL CLIMATES,

ON

## VEGETABLE OR BOTANICAL PRINCIPLES:

AS TAUGHT AT

The Reformed Medical Colleges in the United States:

CONTAINING ALSO A

## TREATISE ON MATERIA MEDICA AND PHARMACY,

OR THE

VARIOUS ARTICLES PRESCRIBED, THEIR DESCRIPTION, HISTORY, PROPERTIES, PREPARATION, AND USES;

WITH AN APPENDIX, ON THE CHOLERA, ETC.

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ILLUSTRATED BY NUMEROUS PLATES AND CASES.

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THE WHOLE PRECEDED BY

## P R A C T I C A L R U L E S

FOR THE

PREVENTION OF DISEASE AND THE PRESERVATION OF HEALTH.

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BY W. BEACH, M.D.

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## PART IV.

### SURGICAL DISEASES.

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#### CHAPTER I.

##### CONNEXION BETWEEN PHYSIC AND SURGERY.

It has been, and still is, customary to make a distinction between physic and surgery, committing the two branches to different sets of men. But this distinction is not well founded, or expedient, since it is impossible to decide where either branch begins or ends. A lecturer in St. Bartholomew's Hospital, in London, has the following judicious remarks upon this subject.

Surgery, says he, is one division of that science and art which have disease for their object. This science, considered generally, embraces the physical history of man. It investigates the construction of the human body, and its living actions; it inquires into the purposes executed by each part, and into the general results of their combined exertions. It observes the human organization under all the various modifications impressed on it by surrounding influences of all kinds; and it draws from these sources the rules for preserving health and removing disease.

The practical application of these rules constitutes *the art of healing*, or rather of *treating disease* (for in many cases we are unable to *heal*, and do not even attempt it); while the assemblage of facts and reasonings on which these practical proceedings are grounded, makes up the science of medicine.

The boundaries of surgery have not hitherto been, and perhaps cannot be, very clearly defined; and the line of demarcation between it and physic is by no means easily traced. Considering the distinction between them to be a mere matter of arbitrary usage, I employ the word surgery in its common acceptation: understanding it to include, 1st. injuries of all kinds; 2nd, the greater part of external and local

complaints; 3dly, such internal affections as produce changes recognisable externally: for example, alterations of figure, colour, or consistence; 4thly, all cases requiring external topical treatment, operations, or manual proceedings of any kind. Such is the catalogue of subjects embraced in the surgical books of Mr. S. Cooper, in his Dictionary and First Lines; also in the treatise of Boyer and Delpech. The title adopted by the latter, *Traite des maladies reputees chirurgicales*, (treatise on the diseases, *reputed or considered* surgical,) shows that the distinction is not better understood in France than in England.

It must be confessed that the boundary just indicated, is obscure and uncertain. Hence, as in the case of contiguous governments with undefined possessions, disputes have arisen respecting the right to certain portions of territory. Injuries, operations, external local complaints, and manual proceedings, are undisputed possessions of surgery. But external and internal diseases cannot be clearly divided. Here physic and surgery join. This is the border-territory between the two provinces, and has accordingly been the scene of some bitter feuds, which even now are hardly completely tranquillized.

As it is thus difficult to establish the distinction, we are not surprised in finding, that in the great majority of instances, physic and surgery are both practised by one set of persons; probably nineteen-twentieths of disease are under their care, and hence they are properly called general practitioners. On the other hand, in cities, and some large towns, they are exercised by two distinct classes of persons, whose education differs widely in important points—they are taught by distinct teachers, in separate courses of instruction; and their regulation is entrusted by law to two distinct bodies, the College of Physicians and Surgeons. Viewing these apparent contradictions, we are naturally led to inquire more narrowly in what the distinction between physic and surgery consists; whether in the nature of the disease allotted to each, or in the mode of treatment; whether there is any essential difference in the mode of learning them? whether it is well-founded? whether it tends to the advantage of the public, or merely to the benefit of the physicians and surgeons?

Nothing like the modern distinction was made by the ancients; there is no trace of it in the Greek, Roman, or Arabian writers. Certain branches of practice were followed separately in Egypt, where the diseases of the eyes, of the teeth, and even of some internal parts, were attended to exclusively by particular classes of practitioners; and some such distinctions existed in Rome: but Hippocrates, Galen, Celsus, and the other medical writers of antiquity, treat indifferently of the nature and management of fevers, injuries, external and internal disorders, and operations. In speaking of treatment, Celsus considers it under three divisions, the same which we still adopt; viz. diet, &c., remedies, surgical or manual proceedings. But the idea of splitting medicine into two parts, and of teaching them differently, seems never to have been entertained by this elegant and philosophic writer, nor by those other great founders and promoters of medical science and practice, whose names and works are still regarded with deference and respect.

In the long night of barbarism and ignorance, which intervened between the downfall of the Roman Empire and the revival of letters in the West of Europe, learning and science were confined to the members of the ecclesiastical profession, to whom we are indebted for preserving those imperfect remains of ancient literature and arts which we still possess. The exercise of medicine harmonized very well with the immediate objects of their holy calling. After the council of Tours, held in 1163, had declared that the church abhors the shedding of blood, (*ecclesia abhorret a sanguine*), priests and monks were obliged to desist from all curative proceedings that involved loss of blood. These were taken up by barbers, attendants on baths, itinerants, and mountebanks. In course of time surgery, which then consisted merely of bleeding, tooth-drawing, and a few other simple processes, became, with the art of the barber, the occupation of a class of men, who were legally incorporated in this and other countries, under the title of barber-surgeons. The separation of surgery, or one branch of treatment, from that medical knowledge which is the indispensable guide to the time and mode of its application, and its association with the heart of the barber, long outlived the circumstances which produced them. In England it lasted till the middle of the last century, when the Company of Barber-Surgeons was legally extinguished, in the reign of George II. The union of the two callings still exists in many parts of Europe.

In order to judge whether there is any well-grounded difference between physic and surgery, it is necessary to advert shortly to the nature of medical science and practice generally.

The numerous individual organs, which make up the human body, although various in structure and office, are all intimately connected and mutually dependent. They are merely subordinate parts of one great machine, and they all concur, each in its own way, in producing one general result, the life of the individual. All the leading arrangements are calculated to give a character of unity to the organization and the living actions of our frame. There is a common source of nutrition for the whole body; a single centre of circulation; a common place of union for all sensations and volitions—for nervous energy of whatever kind. The various organs are not only intimately connected by the share which they severally take in executing associated and mutually dependent functions, they act and re-act on each other, often very powerfully, by those mysterious, or at least hitherto imperfectly known influences, which we call sympathies. Hence the expression of Hippocrates, in relation to the human body, is perfectly correct:—*Labor unus; consentientia omnia*. (One exertion; all parts concurring.) You could form no adequate notion of any organ, or system of organs, if you insulated it from the rest of the body, any more than you could estimate the use of action of any single wheel or lever detached from a watch or a steam-engine.

As the animal machine, although complicated in structure, is single, and as its living motions, although numerous and intricate, form one indivisible series, so a similar connexion runs through those changes of structure and functions which constitute disease: hence there is one anatomy and physiology, and there can be only one pathology. If we



wish to know any portion of the body, we must not only carefully examine the part itself, but survey the relations of structure and function which binds it to the rest; and if we investigate any class of diseases, we must consider, not only the local symptoms, but also the disturbance which the diseased organs may excite in other parts of the frame, and the influence which other parts may exert over the seat of disease.

It must be the first business of the medical student to learn the structure of the body and its living actions; that is, to study man in the state of health. These are the objects of the two sciences, which are denominated anatomy and physiology. He then proceeds to the observation of diseases; he watches the circumstances under which they arise; he follows their progress and termination; he explores the organic changes which they produce, and learns to connect these changes with their appropriate external signs or symptoms; deriving from these comparisons the means of distinguishing the exact seat of disease, and predicting its course and event. These matters form the subjects of morbid or pathological anatomy, and pathology. He is now prepared to employ the external agencies, the outward or inward remedies, or the operative proceedings, which may be necessary for removing disease and restoring health. When disease is studied in this manner, in reference to the whole body, it constitutes the science of general pathology; as a similar investigation, directed to any single organ, is the pathology of that part. The real question respecting the distinction of physic and surgery is this:—after surveying the whole field of disease in the way just mentioned, can you find out any portions insulated from the rest? Any division not connected with other parts, and which can be understood with reference to them? Can you separate this entire subject of disease into two independent halves, requiring different modes of study and practice? Certainly not. The entire structure and functions are universally and intimately connected. No part is independent. The causes of natural functions, and of those deviations which constitute disease, are often found, not in the part itself, but in the state of other associated parts or functions, as in gouty inflammation of the toe; paralysis of the finger; influence of the head on the system in idiopathic fever; in sympathetic fever from injury: and the means of cure are seldom to be applied to the very part diseased.

Again, although individual organs are numerous, the elements of organic structure are few. The various proportions in which they are combined make the difference, as the various combinations of a few letters produce the infinite variety of words. The basis of nearly all parts consists of the cellular, vascular, absorbent and nervous structures. Hence, pathological principles are the same for all parts, and, consequently, treatment must be similar throughout. When diseases are arranged in any form, you may strike a line through, so as to divide the mass into two halves, give them different names, and call them distinct branches of science, but they will resemble each other in all essential points: the causes, origin, course, and treatment of the diseases comprehended under each, will be the same. If you must have a division, separate the two sides of the body, or the upper and lower

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PART IV.

SURGICAL DISEASES.

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halves. This will at least be clear and intelligible. To assert that surgery and physic are essentially distinct, is to say that there are two kinds of pathology that the external and internal parts are to be treated on different principles, it would be as rational to say, that there are two kinds of physiology, one for the outside, another for the inside of the body. When you know the component tissue, or the organic elements of our frame, are the same throughout, can you suppose that the position of a part in the body can alter the nature and treatment of the disease? It may cause differences in the mode of proceeding: thus you cannot act locally on internal parts; it may make the pathological investigation of one organ more difficult or easy than that of another; but it cannot alter essential principles. Inflammation, for instance, is the same kind of disturbance, whether in an internal or external part, and we treat it exactly on the same principles, whether it be in the eye, breast, or testicle, in the heart, lungs, or liver. The principles of pathology, therefore, are general; they are the same for all parts of the medical art. They result from our knowledge of health and disease generally, and must, therefore, be common to the physician and surgeon. Hence we may truly say, with Mr. Abernethy, that surgery and physic considered as objects of scientific investigation, are one and indivisible. We may go further, and assert that no branch of medicine, however limited, can be thoroughly understood except by him who has carefully studied the structure and actions of the whole frame, and then extended his view over the whole field of medical science.

By those who are inclined to defend the existing distinctions between physic and surgery, various views have been taken of it; but none of them will bear examination. Internal diseases have been assigned to the former—external to the latter. Unfortunately for this notion, nature has connected the outside and inside so closely, that we can hardly say where one ends and the other begins. She has decreed that both shall obey the same pathological laws, and has subjected them to such powerful, mutual influences, that we cannot stir a step in investigating the diseases of either, without reference to the other. How deep would the domain of surgery extend, according to this view?—half an inch or an inch? The entrance of the various mucous membranes, presents a series of puzzling cases; and the distribution of diseases in these situations, between the two branches of the profession is quite capricious. How far is the surgeon to be trusted? He is allowed to take care of the mouth: where is he to stop?—at the entrance of the fauces, in the pharynx, or in the œsophagus? Inflammation and ulceration of the throat from syphilis belong to the surgeon:—catarrhal affection of the same membrane to the physician. Polypus and ulceration of the nasal membrane are surgical—coryza is medical. The affections of the bones and joints have been given to the surgeon; yet they can hardly be called external parts. In hernia and aneurism there is external tumour; but it is produced by displacement or disease of organs that are quite internal.

When we look to the nature and cause of disease, the absurdity of the distinction now under consideration is still more apparent, and the inseparable connexion between the interior and exterior of our frame more obvious. Internal causes produce external diseases, as we see

in erysipelas, carbuncle, nettle rash, gout, œdema; while external agencies affect internal parts, as in catarrhal rheumatic affections, in various inflammations of the chest and abdomen. In all these affections, our great reliance is on the external treatment; external and local means are comparatively unimportant.

The eyes have been entrusted to the surgeon as external parts; yet the organ is the most complicated in the body; and many of its component tissues are highly organised, so that its affections are very much diversified, and require a greater insight into pathology and therapeutics than those of any other single part. The eye, with its appendages, not only contains mucous, serous, and fibrous membranes, muscular, glandular, and nervous parts, but also several peculiar tissues. It not only exhibits the various affections of these produced by common disease, but it suffers from gout and rheumatism, from small-pox, measles, scarlatina, and chronic cutaneous eruptions; from scrofula, syphilis, and cancer.

If, therefore, an organ so complex in its structure, and liable to such a number and variety of diseases, can be safely entrusted to the care of the surgeon, I am at a loss to know why there should be any distinction, grounded on the nature of the affections, between the surgeon and physician.

It is in vain, then, to establish separate professorships of external and internal pathology; and to teach them as separate sciences, and to expect that they shall be practised separately. Lecturers and writers cannot make the distinction; and thus we find the same diseases, in many instances, considered by the teachers of physic and surgery, comprehended in the writings of both; illustrated by both on the same principles, and treated by the same means.

Some have proposed to assign local diseases to the surgeon, and general ones to the physician. It may be questioned whether there are any local or general diseases in the strict sense of the terms; at all events, there are very few in which the cause has been applied to the part itself, and the influence of the disease, as well as of the treatment, does not go beyond it; while, on the other hand, there are hardly any in which all parts of the frame are affected. When a part of little consequence in the animal economy is slightly diseased, no sensible effect may be produced beyond the part itself: if, on the contrary, an important organ is actively disordered, many other parts feel the influence; and hence arise what are called general affections. Even in fever, we can clearly trace the general disturbance to a local origin, in ninety-nine cases out of a hundred; so that the very existence of fever, as a general affection, has been questioned. The difference, therefore, between what we call local and general diseases, is merely in degree, not in kind: it is a difference of more or less. If we were to arrange diseases in one column, beginning with the most local, and ending with the most general, we should fill up the interval with others forming an insensible transition between the two extremes. Where could we draw the line across, to divide surgery and physic, on a scale thus constructed?

Reverting to the nature and extent of the duties which originally constituted the occupation of the surgeon, and looking to the etymo-

logical import of the term, which is manual operation, it has been contended that surgery should embrace those cases only in which operations or other manual aid are required. Thus it has been represented, that the province of surgeons is to administer to external ailments; and that among their duties is included the important negative one of prescribing no internal remedy whatever. Such notions are worthy of the ignorance to which the unnatural separation of surgery and physic owes its origin, and of the dark period in which it occurred. Thus this important professional distinction would rest, not on any essential difference in the causes or nature of diseases, or in the principles or treatment, but on the accidental and often varying circumstances of the means employed for their cure. What are we to do with the numerous cases, such as serious inflammations, affections of the head, various gouty and rheumatic diseases, in which change of diet and internal remedies are necessary, in conjunction with topical applications.

If it is meant to confine surgeons to operations and manual proceedings, and thus to reduce surgery to a mere mechanical department of the healing art, I must enter my strongest protest against the arrangement. I should feel degraded in exercising this kind of barber surgery, and I should be a little inclined to attempt touching it. If our profession were reduced to this, it would no longer be necessary for us to study its scientific principles. We might spare ourselves the toil and trouble of learning anatomy, physiology, pathology, and therapeutics; and we might well resign into the hands of our old associates, the barbers, the contemptible remnant to which surgery would then be reduced.

## CHAPTER II.

### SYMPATHY.

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The doctrine of sympathy should be well understood by the practitioner.

All the body is sympathetically connected together, and dependent, the one part upon the rest, constituting a general sympathy. But sometimes we find particular parts more intimately dependent upon each other than upon the rest of the body, constituting a particular sympathy. Action cannot be greatly increased in any one organ, without being diminished in some other; but certain parts are more apt to be affected by the derangement of particular organs than others. It may be thought that this position of action being diminished in one organ, by its increase, either in the rest or in some other part, is contradicted by the existence of general diseases or actions affecting the whole system. But in them we find, in the first place, that there is always some part more affected than the rest. This local affection is sometimes the first symptom, and affects the constitution in a secondary way, either by the irritation which it produces, or by an extension of the specific action. At other times the local affection is coeval with the general disease, and is called sympathetic. It is observed, in the second place, that as there is some part which is always more affected than the rest, so also is there some organ which has its action, in consequence of this, diminished lower than that of the rest of the system, and most commonly lower than its natural standard. From the extensive sympathy of the stomach with almost every part of the body, we find that this most frequently suffers, and has its action diminished in every disease, whether general or local, provided that the diseased action arises to any considerable degree. There are also other organs which may, in like manner, suffer from their association or connection with others which become diseased. Thus, for instance we see, in the general disease called puerperal fever, that the action of the breasts is diminished by the increased inflammatory action of the uterus.

In consequence of this balance of action, or general connection of the system, a sudden pain, consequent to violent action of any particular part, will so weaken the rest as to produce fainting, and occasionally death. But this dependence appears more evidently in what may be called the smaller systems of the body, or those parts which seem to be more intimately connected with each other than they are with the general system. Of this kind is the connection of the breasts with the uterus of the female; of the urethra with the testicles of the male; of the stomach with the liver; and of the intestines with the stomach, and of this again with the brain; of the one extremity of the bone with the other; and of the body of the muscle with its insertion; of the skin with the part below it.



These smaller systems, or circles, shall be treated regularly; but first it may be proper to observe, that these are not only intimately connected with themselves, but also with the general system, a universal sympathy being thus established.

That there is a very intimate connection between the breasts and uterus has been long known; but it has not been very satisfactorily explained. Fallopius, and all the other authors, declare plainly that the sympathy is produced by an anastomosis of vessels; Bartholin adding that the child being born, the blood no longer goes to the uterus, but is directed to the breasts and changed into milk. But none of all those who talk of this derivation, assign any reasonable cause which may produce it.

In pregnancy, and at the menstrual periods, the uterus is active; but, when the child is delivered, the action of the uterus subsides, while the breasts in their turn become active, and secrete milk.

If, at this time, we should again produce action in the uterus, we diminish that of the breasts, and destroy the secretion of milk, as is well illustrated by the case of inflammation of the uterus, which is incident to lying-in women. When the uterus, at the cessation of the menses, ceases to be active or to secrete, we often find that the breasts have an action excited in them, becoming slowly inflamed, and assuming a cancerous disposition. The uterus and breasts seem to be a set of glands balancing each other in the system, one only being naturally active, or secreting properly, at a time; and accordingly we seldom, if ever, find that when the uterus yields the menstrual discharge, the milk is secreted in perfection, during the continuance of this discharge, nor do we ever find them both inflamed at the same time.

The uterus has not only this connection with the breasts, but it has also a very particular sympathy with the stomach, which again sympathizes with the brain; and thus we see how a disorder of the uterus may induce an extensive series of affections, each dependent on the other.

The organs of generation in the male, form likewise a little system, in which all the parts exhibit this sympathy with each other. They likewise give us a very good instance of the association of action, or sympathy, in the common acceptation of that word.

Sympathy is divided into, first, the sympathy of equilibrium, in which one part is weakened by the increased action of another; and, secondly, the sympathy of association, in which two parts act together at the same time.

The sympathy of association is produced suddenly, and for a short time. The sympathy of equilibrium is produced more slowly, and continues to operate for a much longer time.

It is curious enough, that most, or at least many, of those organs, which seem to be connected by the sympathy of equilibrium, exhibit likewise more or less of the sympathy of association, when under the circumstances in which this can take place.

The sympathy of equilibrium is seen in the effects of inflammation of the end of the urethra on the testicle; which often diminishes its action, and produces a very disagreeable sensation of dulness, or, if this inflam-

mation be suddenly diminished, the action of the testicle is as suddenly increased, and swelling takes place. The same in the connection of the urethra with the bladder and prostate gland, as is mentioned in all the dissertations on gonorrhœa. These parts likewise affect the stomach greatly, increased action in them weakening that organ much. This is seen in the effects of swelled testicle, or excessive venery, or inflamed bladder, and in a stone; all which weaken the stomach, and produce dyspepsia. The same remark applies to the kidney; vomiting and flatulence being produced by inflammation of the kidneys.

There is also an evident sympathy between the stomach and lower tract of intestines; which two portions may be said in general to balance each other in the abdomen. When the action of the intestines is increased in diarrhœa, the stomach is often weakened, and the patient tormented with nausea. This will be cured, not so easily by medicines taken into the stomach, as by anodyne clysters, which will abate the action of the intestines. When the intestines are inflamed, as in strangulated hernia, vomiting is a never-failing attendant.

When again the stomach is inflamed, the intestines are affected, and obstinate costiveness takes place; even in hysterical affections of the stomach, the intestines are often deranged. Injections frequently relieve these affections of the stomach, by their action on the intestines.

The liver and stomach are also connected with one another. When the liver is inflamed, or has its action increased, the stomach is weakened, and dyspeptic symptoms take place. When the stomach is weakened, as, for instance, by intoxication, then the action of the liver is increased, and a greater quantity than usual of bile is secreted. The same takes place in warm climates, where the stomach is much debilitated.

If the liver has its action thus frequently increased, it assumes a species of inflammation, or becomes, as it is called, *schirrus*. This is exemplified in the habitual dram-drinkers, and in those who stay long in warm countries, and use freedoms with the stomach. The liver likewise sympathizes with the brain; for when this organ is injured, its action much impaired, as in compression, inflammation and supuration have been often known to take place in the liver.

Besides this connection of the stomach with the liver, it is also very intimately dependent on the brain, being weakened when the action of the brain is increased; as we see in an inflammation of that organ. The brain again is affected with pain when the stomach is weakened by intoxication or other causes; and this pain will be often relieved by slowly renewing the action of the stomach by such stimuli as are natural to it, such as small quantities of soup frequently repeated. A slight increase of action in the stomach, at least if not of a morbid kind, affects the brain so as to produce sleep, diminishing its action. This we see in the effects of a full meal, and even of a draught of warm water. The stomach likewise sympathizes with the throat, squeamishness and anorexia being often produced by inflammation of the tonsils. This inflammation is frequently abated by restoring or increasing the action of the stomach. Hence the throat, in slight

inflammation, is frequently easier after dinner; hence, likewise, the effects of emetics in cynanche.

The extremities of bones and muscles also sympathize in the same manner. When one end of a bone is inflamed, the action of the other is lessened, and pain is produced; for a painful sensation may result both from increased and diminished action. When the tendon of a muscle is inflamed, the body of that muscle often is pained, and *vice versa*.

Lastly, the external skin sympathizes with the parts below it. If it be inflamed, as in erysipelas, the parts immediately beneath are weakened, or have their natural action diminished. If this inflammation affect the face, or scalp, then the brain is injured; and head-ache, stupor, or delirium supervene. If it attack the skin of the abdomen, then the abdominal viscera are affected, and we have vomiting and purging, or obstinate costiveness, according to circumstances. This is illustrated by the disease of children, which is called by the women the bowel hive, in which the skin is inflamed from some morbid matter within.

If the internal parts be inflamed, the action of the surface is diminished, and, by increasing this action, we can lessen or remove the disease below; as we see daily proved by the good effects of external stimulants. When the stomach, intestines, or kidney have been very irritable, a sanapism has been known to act like a charm.

The utility of counter irritants in diseases of the lungs, the liver, and the joints, is to be explained on the same principle. In these cases we find that they do little good unless they be somewhat painful.

It is a well established fact, that when any particular action disappears suddenly from a part, it will often speedily affect that organ which sympathizes most with the part that was originally diseased. This is best seen in the inflammatory action, which, as practical writers have well observed, occasionally disappears quickly from the part first affected, and then shows itself in some other.

From the united testimony of all these facts, Mr. Burns, of Glasgow, maintains the doctrine just delivered, and proposes to introduce it into pathological reasonings. In the whole of the animal economy, we discover marks of the wisdom of the Creator, but perhaps in no part of it more than in this, of the existence of the sympathy of equilibrium; for, if a large part of the system were to have its action much increased, and all the other parts to continue acting in the same proportionate degree as formerly, the whole must be soon exhausted; (for increased action would require for its support an increased quantity of energy.)

But upon this principle, when action is much increased in one part, it is to a certain degree diminished in some other, the general sum or degree of action in the body is thus less than it otherwise would be, and consequently the system suffers less.

## CHAPTER I.

### INFLAMMATION.

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#### *Description.*

A disease characterized by heat, pain, redness, attended with more or less of tumefaction and fever. Inflammation is divided into two species, viz. phlegmonous and erysipelatous.

Besides this division, inflammation is either acute or chronic, local or general, simple or complicated with other diseases.

#### *Causes.*

The occasional and exciting causes of inflammation are very numerous: they, however, may generally be classed under external violence, produced either by mechanical or chemical irritation, changes of temperature, suppressed perspiration, and stimulating foods. Fever often seems to be a remote cause; the inflammation thus produced is generally considered as critical. Spontaneous inflammation sometimes occurs when no perceptible cause can be assigned for its production. Scrofula and syphilis may be considered as exciting causes of inflammation.

With regard to the proximate cause, it has been the subject of much dispute. Galen considered phlegmon to be produced by a superabundance of the humor sanguineus. Boerhaave referred the proximate cause to an obstruction in the small vessels, occasioned by a lentor of the blood. Cullen and others attributed it rather to an affection of the vessels than a change of the fluids.

The proximate cause, at the present period, is generally considered to be a morbid dilatation, and increased action of such arteries as lead and are distributed to the inflamed part.

Fevers often seem to become the remote causes of local inflammation. In other instances, inflammation appears to arise spontaneously, or, as I should rather say, without any perceptible exciting cause.

The principle, on which the application of cold to a part becomes the remote cause of inflammation, is not decidedly known. "No subject (says a distinguished professor) is more deserving of your study, than the effects which are produced in the human body by the operation of cold applied to its surface; but the subject is, at the same time, exceedingly extensive, complicated, and difficult. These effects differ according to the degree in which the cold is applied, the state of the system, the part of the body to which it is applied, and the mode of its application. So diversified, indeed, are these effects, that it requires no mean confidence in theoretical reasoning to believe, that the operation of cold in producing them is explicable upon any single general principle."—(See *Thompson on Inflammation*, p. 58.)



And in the preceding page he observes: "The operation of cold upon the human body affords the best example which I can suggest to you, of the production of inflammation from the operation of a power acting upon a part at a distance from that in which the inflammation takes place. The instances formerly mentioned of inflammation of the throat, chest, or belly, from the application of cold to the feet, are daily occurrences in these climates, of which it is impossible for us, in the present state of our knowledge of the animal economy, to give any thing like a satisfactory explanation.

"In some instances, cold, or a diminution of temperature, seems to act more directly upon the parts with which it comes into contact. We have examples of this in the inflammation of the mucous membranes of the nose, fauces, trachea, and bronchiæ, from the inhalation of cold air; and in the production of rheumatic inflammation from the accidental exposure of some part or other of the body to cold. The application of cold, in the instance I have mentioned, seems to have somewhat of a directly exciting effect; and perhaps the same remark is still more applicable to the local effects of cold in the production of the inflammation accompanying the state which is usually denominated frost-bite. Touching a solid body, as a piece of metal, the temperature of which has been greatly reduced, produces a sensation like that of burning, and may be followed, like the application of fire, by a blister."—(*Op. cit.*)

Numerous opinions have been entertained respecting the *proximate cause of inflammation*; but almost every theory has been built upon the supposition of some kind of obstruction in the inflamed part.

But the proximate, or immediately exciting cause of inflammation is, usually, the irritation or action of a stimulus or foreign agent, which has been retained in the circulation by a suppression of perspiration, and this is thrown with an accumulated quantity of blood to different parts or organs, and produces irritation and inflammation; or, in other words, it arises from retained perspirable matter, mixed with the circulating mass, which retreats from the surface to the centre, or is driven in an undue or unequal quantity to the part, which becomes inflamed. The balance is lost in the circulation, and there is an irregular distribution of morbid or vitiated blood, occasioned principally by cold.

### *Symptoms.*

1. *Phlegmonous inflammation* is known by its bright red colour, tension, heat, and a circumscribed, throbbing, painful tumefaction of the part; tending to suppuration. Phlegmon is generally used to denote an inflammatory tumour, situated in the skin or cellular membrane. When the same disease affects the viscera, it is usually called phlegmonous inflammation.

2. *Erysipelatous inflammation* is considered as an inflammation of a dull red colour, vanishing upon pressure, spreading unequally, with a burning pain, the tumour scarcely perceptible, ending in vesicles, or desquamation. This species of inflammation admits of a division into erythema, when there is merely an affection of the skin, with very little of the whole system; and erysipelas, when there is general affection of the system.

The fever attending erysipelatous inflammation is generally synchus or typhus, excepting when it affects very vigorous habits, and then it may be inflammatory. The fever attending phlegmonous inflammation is almost always such. Persons in the prime of life, and in full vigour with a plethoric habit of body, are most liable to the attacks of a phlegmonous inflammation; whereas those advanced in years, and those of a weak habit of body, irritable, and lean, are most apt to be attacked with erysipelatous inflammation.

Phlegmonous inflammation terminates in resolution, suppuration, gangrene, and schirrhus, or induration. Resolution is known to be about to take place when the symptoms gradually abate: suppuration does not readily yield to proper remedies, the throbbing increases, the tumour points externally, and rigors come on. Gangrene is about to take place when the pain abates, the pulse sinks, and cold perspirations come on. Schirrhus, or induration, is known by the inflammation continuing a longer time than usual; the tumefaction continues, and a considerable hardness remains. This kind of tumour gives little or no pain, and, when it takes place, it is usually the sequel of inflammation affecting glandular parts. It sometimes, however, is accompanied with lancinating pains, ulcerates, and becomes cancerous.

Erythematous inflammation terminates in resolution, suppuration, or gangrene. The symptoms of inflammation are accounted for in the following way:—

#### *Redness.*

This is manifestly owing to the increased quantity of blood in the inflamed part. More blood must necessarily be contained there, because the vessels which previously conveyed this fluid are preternaturally distended, and the small vessels, which naturally contained only lymph, are now so enlarged as to be capable of receiving red blood. "I froze (says Mr. Hunter) the ear of a rabbit, and thawed it again: this occasioned a considerable inflammation, an increased heat, and thickening of the part. This rabbit was killed when the ear was in the height of inflammation, and the head being injected, the two ears were removed and dried. The uninflamed ear dried clear and transparent, the vessels were distinctly seen ramifying through its substance; but the inflamed ear dried thicker and more opaque, and its arteries were considerably larger."

Many have supposed that the redness of common inflammation is partly occasioned by the generation of new vessels. This doctrine, however, seems very questionable. When coagulated lymph is extravasated upon the surface of a wound, or an inflamed membrane, unquestionably it often becomes vascular, in other words, furnished with new vessels. But in the extravasated lymph of a phlegmonous tumour, we have no evidence that there is any formation of new vessels. Were the lymph to be rendered organized and vascular, the swelling and redness would probably be more permanent.

#### *Swelling.*

This effect arises from several causes: 1. The increased quantity of blood in the vessels. 2. The effusion of coagulating lymph, and

serum, and deposition of new matter. 3. The interruption of absorption particularly noticed by Soemmering.—(*De Morb. Vas. Absorb.*)

### *Pain.*

This is observed to be the greatest during the diastole of the arteries. The affection is probably owing to the unnatural state of the nerves, and not to mere dissension, as many have asserted. Were the latter cause a real one, the pain would always be proportioned to it.

“Parts, which in the sound state have little or no sensibility (as Dr. Thompson remarks,) become exquisitely sensible in the inflamed. That this is the case with tendon, ligament, cartilage, bone and membrane, seems to be fully established by Dr. Whytt in the very instructive controversy carried on between him and Haller, respecting the sensibility and irritability of the different parts of man and other animals.

### *Heat.*

The augmented heat of inflammation may be conceived to arise from the increased velocity of the circulation in the part affected. More blood is transmitted into the minute arteries; the capacity of a greater quantity of this fluid for heat is of course there necessarily diminished, and more caloric is extracted.

### *Buffy coat.*

Blood taken from a person labouring under active inflammation, exhibits a yellowish white crust on the surface; this is denominated the buffy coriaceous, or inflammatory coat. This consists of a layer of coagulable lymph, almost destitute of red particles. Blood, in this state, is often termed *sizy*. The colouring part of the blood is its heaviest constituent; and, as the blood of a person labouring under inflammation is longer coagulating than healthy blood, it is supposed that the red particles have an opportunity to descend to a considerable depth from the surface before they become entangled. The buffy coat of blood is generally the best criterion of inflammation; there are a few anomalous constitutions in which this state of blood is always found; but these are rare.

### *Terminations or Consequences of Inflammation.*

The terminations of inflammation are *resolution*,—*adhesion*,—*effusion*,—*schirrhus*,—*suppuration*,—*gangrene*.

*Of Resolution.*—By resolution is meant a gradual subsidence, or going off, of all the inflammatory symptoms; the state and texture of the part remaining entire.

*Of Adhesion.*—Adhesion is when coagulable lymph has been thrown out from the orifices of the inflamed vessels; and by its agglutinating qualities has cemented as it were membranes, or other contiguous parts, together.

When adhesion is completed, vessels shoot from the opposite sur-

faces, through the coagulable lymph, and anastomose, so as to completely organize the lymph, and form it into cellular membrane.

*Of Effusion.*—This termination is peculiar to cavities lined with smooth diaphanous membranes; the fluid effused is various, and depends upon the nature of the inflammation, the strength of the structure of the part. It may possess all the intermediate degrees or properties between serum, coagulable lymph, and pus.

*Of Schirrhus.*—Schirrhus, or induration, is when the inflammation leaves the part hard and swollen. It is a termination of inflammation more peculiar to glandular parts.

### *Of Suppuration and Abscess.*

*Symptoms.*—Suppuration is the process of the formation of pus.—Its accession is marked by rigors, if the inflammation be considerable; dull heavy weight of the affected part, by the pain becoming more lancinating, and accompanied with a peculiar throbbing of the neighboring arteries, fluctuation; by the swelling becoming gradually more elevated above the surface of the surrounding cuticle, acquiring a softness to the feel, and showing a tendency to point in one particular place. If the process be suffered to go on without interruption, the integuments become more and more thin, and change to a whitish or yellowish color; they at length lose their firmness, give way, and pus is discharged at the opening.

### PROGNOSIS.

The prognosis in inflammation will be drawn from the violence of the symptoms, and from the seat of the inflammation.

*Favourable.*—The pain, heat, redness, and other inflammatory symptoms gradually diminishing, and at length altogether ceasing (see the Terminations of Inflammation);—or the swelling becoming more circumscribed; prominent in the centre; soft and fluctuating (see Suppuration); the constitution at the same time being a little affected.

*Unfavorable.*—Violent fever with delirium; the inflammatory appearances suddenly ceasing, followed by the formation of blisters, discharging a thin ichorous matter; the part becoming of a livid colour, and losing its sensibility. See Mortification.

### COMMON TREATMENT.

#### *Bleeding, Blistering, &c.*

*Effects of Bleeding.*—By reference to the lectures of Sir Astley Cooper, it will be seen that he has some allusion to the effect of the loss of blood in inflammation. If, says he, you adopt a system of free depletion, nature will not be equal to the restoration of the injured parts, and the most disastrous consequences follow the indiscriminate employment of blood-letting. There is not a greater error than this in the practice of surgery.

A stout man was admitted into Guy's Hospital, having a simple fracture of the tibia, with considerable contusion of the surrounding



parts ; a day or two after his admission, he had severe constitutional irritation, and acute pain, with spasmodic action of the muscles near the seat of injury. To relieve these symptoms, the dresser was directed to take some blood from the arm of the patient, which he did ; but thinking it proper that faintness should be produced, as a proof of its effect upon the constitution, and forgetting that the patient was in a recumbent position, he abstracted so large a quantity of blood, that all power of restoration was completely annihilated, and the man died.

The first effect noticed is a diminution in the force and rapidity of the circulation, which is manifested by the pulse becoming slower and softer. By and by the motion of the heart is so much weakened, that it no longer propels the blood with sufficient force to support the functions of the brain. The individual becomes pale—he complains of weakness and nausea, which sometimes proceeds to vomiting, but more frequently, the functions of the brain becoming more and more completely suspended, he loses all power of sensation and voluntary motion—he is no longer able to stand or sit—there are frequently slight tremors of the muscles, and in some rare cases violent convulsive contractions of them—he makes some deep inspirations and expirations—looks wildly about him, and falls into a state closely resembling death, which is named Syncope. Syncope occurs most readily when the patient is in an erect posture, and a very large quantity of blood may be withdrawn without inducing it if he lies horizontally. The most effectual method of recovering one from this state is consequently to lay him on his back. The quantity of blood which must be abstracted to induce syncope in ordinary circumstances is extremely variable. Sometimes several pounds may be withdrawn before its symptoms appear, and at other times a few ounces are sufficient for the purpose ; the patient's mental alarm has a considerable share in producing the effect, but in general sixteen or twenty ounces are required.

When the patient is very weak, or very largely depleted, the syncope either passes directly into death, or is succeeded by an intermediate state, named Sinking. In this condition the pulse is small, feeble, and intermittent ; the countenance is deadly pale, and bedewed with clammy moisture : the extremities are cold, and the patient has a distressing sensation of weakness. He lies in a dozing state ; and when roused from it takes some time to recollect his situation, often at first expressing himself incoherently. His breathing is uneasy, being performed with dilatation of the nostrils, and is frequently attended with slight crepitation, or mucous rattle in the chest. This state, after continuing for hours, or it may be even for days, terminates in death, which is usually preceded by hiccup and vomiting.

When the quantity of blood abstracted is not too great, in proportion to the strength of the patient, there is a recovery or reaction of the system. After an ordinary syncope, the symptoms go off in the inverse order of their approach ; and when the patient has completely regained his faculties, it is generally observed that the actions which were suspended are performed with a slight degree of excitement. This is most observable with regard to the pulse, which is rather more sharp and frequent for sometime afterwards than it was before, provided the patient did not labour under any febrile disturbance

This excess of reaction is observed to be proportioned in degree to the strength of the patient and the quantity of blood withdrawn, provided it is not so large as at once to induce sinking or death. Excessive reaction closely simulates the symptoms of inflammatory fever. The pulse is extremely frequent, and has a peculiar jarring or jerking sort of character—the respiration is hurried—the face is flushed—the eyes are red and suffused—the patient complains of intense headache, and distracting noises in his ears—and when blood is drawn, it exhibits the buffy coat, though hardly the cupped surface which is seen during inflammation. The local symptoms of inflammation are not wanting; and the brain, with its membranes, is the part which, out of all proportion, most frequently suffers; but the viscera of the thorax and abdomen are not exempt from risk.

This curious state, for pointing out which we are much indebted to Dr. Marshall Hall, may be induced either by one or two very large bleedings, or by a great number of small ones, causing a continued drain on the system for days, weeks, or months; and accordingly, as it occurs in one or other of these ways, the symptoms vary in the degree of their violence or acuteness. It may terminate in fatal effusion on the brain, or some other important organ, in sinking, or in a return to health. Bleeding, as might be expected, though it affords temporary relief, always increases the evil, either by making the state of excitement more quickly terminate in sinking, or by increasing the violence of its symptoms. Restoring the secretions, perfect rest both of body and mind, poultices, cooling applications, gentle opiates, and the gradual operation of time, ought to be trusted to as the means of relief.

The discrimination between the symptoms of excessive reaction and those of inflammation, is of the utmost importance in practice; and the following observations as to the circumstances which modify the effects of hemorrhage are deserving of much attention.

In young subjects, that is to say children and infants, the power of reaction is feeble, and the risk of sinking consequently great.

In adult subjects who are weak from age or any other cause, there is also small power of reaction; but their danger of sinking is not merely in the first instance, and continues for a much longer time afterwards, as the restoration to health is slow and imperfect.

In the healthy and robust individual there is always excessive reaction, unless the bleeding be so small as not to affect the system sufficiently, or so profuse as to cause sinking or death in the first instance.

Pain, fear, and the exhaustion produced by protracted fever, or the discharge of matter, increase the risk of sinking.

#### REFORMED PRACTICE.

*Indications of Cure.*—The most desirable object in treating inflammation of every kind, is to cause it to terminate in resolution, or to subside and disappear without suppuration, or leaving any change of the structure or actions of the part affected. The most obvious indication then, in the first instance, is to remove the cause which has excited the inflammation, should it still continue. But when this

cannot be done, the process for removing it is generally more tedious and difficult, requiring the use of both internal and external applications.

*Removal of exciting causes.*—In all cases, the first circumstance to be attended to is the removal of all such exciting causes as may happen to present themselves. If the irritation of a splinter were to excite phlegmonous inflammation, who would not of his own accord directly take away the extraneous body? In wounds, foreign substances frequently excite inflammation, and ought to be taken away as speedily as possible; splintered pieces of bone often give rise to the affection, and require removal; the head of a bone, being out of its place, may press and inflame the part on which it lies; and who does not immediately see the propriety of putting it back into its natural situation? These and other similar exciting causes may often be detected and removed at once, and this is doing a great deal towards the cure and even the prevention of inflammation. However, many of the exciting causes of this affection are only of momentary application; yet, though their action is thus short, the process of inflammation must follow, as a kind of salutary operation, without which, the injured organization and tone of the parts, still remaining, could not be rectified again. Hence, besides taking away the remote cause, whenever this can be done, it is proper to moderate, by other means, the increased action of the larger arteries, and lessen the velocity of the blood's motion towards the inflamed part.

*Purgatives.*—It must be kept in view that the only correct method, or mode of reducing inflammation, is to *restore the secretions and excretions* of the different organs, and by opening the different outlets of the system, we diminish arterial or febrile excitement. *Purgatives*, for this purpose, are to be administered. They lessen the quantity of the circulating mass, and thus, by their depletive effect, lessen inflammation. Those of a refrigerant kind are, among others, very serviceable; such as the following:

Take—

Alexandria Senna leaves, (*bruised*),  
Manna,  
Cream of Tartar,—of each half an ounce,  
Fennel Seed, bruised, one drachm, or a tea spoon full.

To the senna and manna add a pint of boiling water, simmer it till there is half a pint of the liquor; strain, sweeten, and add the cream of tartar. Of this, let the patient take a wine-glass every hour, till it purges. It lessens inflammation both by its cathartic and diuretic properties.

*Perspiration.*—Another most important means of subduing inflammation is, by restoring or exciting a preternatural action of the skin or capillary system. When this is deranged, inflammation is always increased, but is immediately diminished when its functions are restored. A person who has a hot and dry state of the skin, feeling excessively heated, will be immediately relieved and become cool as soon as you produce free perspiration. The medicines to be employed for this, must depend on circumstances. If the patient is able to sit up, the VAPOUR BATH will bring on free perspiration in fifteen or twenty minutes. It is only necessary to place him over a tub, containing a



decoction of bitter herbs, with a blanket around him to retain the steam. He should also drink diuretic infusions or teas made of spearmint or catnip, and the feet should also be bathed.

Where there is local irritation or inflammation, the parts should be first fomented, or steamed, with a *decoction of bitter herbs*. They lessen pain and inflammation by removing the tension of the parts, as well as by exciting perspiration.

If the heat is very excessive, cooling or refrigerant lotions may be applied, such as a solution of borax and acetate or sugar of lead.

The following mixture I have found useful in Erysipelatous Inflammation :

Take—

Acetate of Lead,—one drachm,  
Of Spring or Rain-water,—a porter bottle.

Let linen cloths be dipped in the solution and applied to the parts, and when dry to be renewed.

*Poultices and Cataplasms*.—Of all the applications to remove local inflammation, there is none which has ever been discovered or used, which will bear any comparison in point of utility or efficacy, with the *Slippery elm bark*, (*Ulmus Fulva*). It has a specific action, that no other article possesses with which I am acquainted. I have tried every other kind, such as bread and milk, linseed, &c, and I find, compared to this, that they dwindle into insignificance. It is the most soothing, softening, relaxing and refrigerant, and acts the most speedily of any other production ; and it is the most universal in its application, being suitable for every species of inflammation. It usually changes the appearance of the inflamed part from a high degree of redness to perfect whiteness, at the same time that it diminishes the swelling, and lessens irritation and inflammation ; and it is the only article that will seldom or never disappoint the practitioner in its effects. Even where other kinds of poultices are indicated, this, in combination, forms a most valuable auxiliary, such as a decoction of certain roots, yeast, &c.

If inflammation can be terminated by resolution, this indication is answered by it, and, on the other hand, if suppuration be necessary to bring about a healthy action, it is favored by this poultice. It also prevents mortification. I never knew a case occur after its use.

*Method of Using it*.—The *superfine flour* of the *Elm Bark* should be mixed with water, or milk, and brought to the consistence of a poultice ; about a large table-spoon full of the powder is sufficient for a pint of liquid. In some cases, particularly erysipelatous inflammation, I have found milk better than water to mix with it. Sometimes, or in obstinate cases of inflammation, where suppuration proceeds slowly, the bark may be mixed with weak ley, and applied. This makes an excellent poultice, especially for white swellings, felons, inflammation of the breast, &c. I sometimes mix it with beer, or ale, and occasionally a decoction of *catnip*, *wild indigo root*, and such other agents as the peculiar character or stage of the inflammation may require.

The poultice made of the powder of *linseed*, or flaxseed, pulverized, forms a very good one in many cases. Indeed, in inflammation attend-



ing carbuncle; I have found this poultice, combined with an equal part of slippery elm, preferable to any other. It has the property of very much facilitating suppuration. As much hot water is to be put into a basin as the size of the poultice requires, and then the linseed powder and elm is to be gradually mixed with it till the mass is of the proper consistence. A small quantity of sweet oil may be added to keep it longer soft and moist.

*Fomentations* are only to be considered as temporary applications, while poultices are permanent ones.

As regards the temperature of poultices, in their application to inflamed parts, no definite direction can be laid down. As a general rule, however, I have always found that they answer best applied warm or tepid. Applied cold, sometimes a more immediate or temporary benefit may follow, but the sedative effect of the cold, after a time, seems to prove injurious; but the only sure criterion is the feeling and comfort of the patient. Poultices should never be suffered to get dry and hard, but should often be renewed or changed, and they will keep moist much longer, if the muslin or linen on which they are laid, be first moistened.

*Anodynes combined with sudorifics* contribute much to diminish irritability, and thus lessen inflammation.

When the patient is wakeful, restless, and in pain, the disease is exasperated or increased. An anodyne, particularly when it is combined with a diaphoretic, has the effect to remove these symptoms; pain and inflammation are lessened by the narcotic and sudorific properties of such a combination.

*The diaphoretic powders* answer this purpose well; they should be given, particularly at night, and may be given also at other times, if occasion requires, to be accompanied with the use of diluent drinks.

*Rest.*—In the treatment of inflammation, it is indispensably necessary that rest be enjoined upon the patient. Exercise, by increasing the action of the heart and arteries, increases the inflammation.

*Diet.*—The diet used has a tendency to increase, or lessen the inflammation. Stimulating kinds of food and liquids should be avoided, and that of a cooling nature substituted.

I have sometimes leeches and cupped for local inflammation; but where the parts are very irritated and inflamed, it has a tendency to exasperate it, and generally no great benefit is derived from either, though there may be cases in which they may prove serviceable.

*Blood-letting* should be carefully avoided; it so far weakens the action of the heart and arteries, that they are incapable of propelling a sufficient quantity of blood to the parts inflamed, to effect a restoration. Excessive reaction may be moderated, by the means already mentioned.

## CHAPTER II.

### MORTIFICATION.

#### *Description.*

We understand by the term mortification, a loss of vitality in any part or portion of the body. It has been divided into, first, *humid, inflammatory*, or *acute*; and, second, into dry or chronic. It is also divided into two other species, the one preceded by inflammation, the other without it.

In inflammations that are to terminate in mortification, there is a diminution of power joined to an increased action; this becomes a cause of mortification, by destroying the balance of power and action, which ought to exist in every part. There are, however, cases of mortification that do not arise wholly from that as a cause; of this kind are the carbuncle, and the slough, formed in the small-pox pustule. Healthy phlegmonous inflammation seldom ends in mortification, though it does so when very vehement and extensive. Erysipelatous inflammation is observed most frequently to terminate in gangrene; and whenever phlegmon is in any degree conjoined with an erysipelatous affection, which it not unfrequently is, it seems thereby to acquire the same tendency, being more difficult to bring to resolution, or suppuration, than the true phlegmon, and more apt to run into a mortified state.

#### *Causes.*

The external causes of mortification which are manifest, and act mechanically or chemically, are burns, excessive cold, the application of caustics, the presence of any ichorous, urinary, or fecal matter effused in the cellular substance, violent contusions, such as are produced by gun-shot wounds, or bad fractures; the strangulation of a part, as in cases of hernia, or when polypi or other tumours are tied, a high degree of inflammation; and, lastly, every thing that has the power of stopping the circulation and nervous energy in parts.—(*Lassus, Pathologie Chir. t. 1, p. 34, 35.*)

Inflammation is one of the most frequent occasional causes of mortification.

Causes which impede the circulation of the part affected, will occasion mortification, as is exemplified in strangulated hernia, tied polypi, or a limb being deprived of circulation from a dislocated joint.

Preventing the entrance of arterial blood into a limb, is also another cause. Paralysis, conjoined with pressure, old age, and ossification of the arteries, may produce mortification; also cold, particularly if followed by the sudden application of warmth; and likewise excessive heat applied to a part.

The symptoms of mortification that take place after inflammation, are various, but generally as follows: the pain and sympathetic fever suddenly diminish, the part affected becomes soft, and of a livid colour, losing at the same time more or less of its sensibility.

When any part of the body loses all motion, sensibility, and natural heat, and becomes of a brown livid or black colour, it is said to be affected with sphacelus. When the part becomes a cold, black, fibrous, senseless substance, it is termed a slough. As long as any sensibility, motion, and warmth continue, the state of the disorder is said to be gangrene. When the part has become quite cold, black, fibrous, incapable of moving, and destitute of all feeling, circulation, and life; this is the second stage of mortification, termed *sphacelus*.

When gangrene takes place, the patient is usually troubled with a kind of hiccough: the constitution always suffers an immediate dejection, the countenance assumes a wild cadaverous look, the pulse becomes small, rapid, and sometimes irregular; cold perspirations come on, and the patient is often affected with diarrhœa and delirium.

Though long continuance in the same posture is one cause of mortification, yet incidental circumstances are frequently combined with it, and have great influence over the disorder. These are, great debility, the same state of the system as exists in typhus fever, impure air, unclean bedding, &c. Some fevers have a greater tendency than others to produce gangrene, as is the case with scarlatina. In slight cases of this disorder, the most horrible effects will sometimes arise from gangrene. The tonsils will slough to a great extent; parts of the Eustachian tube, and even the tympanum will separate, and large portions of bone exfoliate. There is dangerous sloughing frequently brought on in measles by the application of large blisters to the chest of children, and their disposition to sloughing, occasioned by the use of mercury, or by whatever tends to weaken the constitution.

There are some causes which produce death in a part at once, by the violence of their operation. A very powerful blow on any portion of the body may destroy its vitality in this sudden manner. Lightning, strong concentrated acids, and gun-shot violence, sometimes act in a similar way. When a ball enters parts with great force and rapidity, many of the fibres which are in its track are frequently killed at once, and must be thrown off in the form of sloughs, before the wound can granulate and heal.

Cold is often another cause of mortification, and, when parts which have been frozen or frost-bitten are suddenly warmed, they are particularly apt to slough.

In Baron Larrey's publication there is some interesting observations on the gangrene from cold. He acquaints us, that after the battle of Eylau, one of the most grievous events to which the French soldiers were exposed, was the freezing of their feet, toes, noses, and ears; few of the vanguard escaped the affliction. In some, the mortification was confined to the surface of the integuments of the toes or heels; in some, the skin mortified more deeply, and to a greater or less extent; while in others, the whole of the toes or foot was destroyed.—(See *Programma quo frigoris acrioris in corpore humano effectus expendit. Haller. Disp. ad Morb. Lips. 1775.*)

Dr. James enumerates the following circumstances, as capable of influencing, in a very great degree, the disposition of inflammation to terminate in mortification. 1. The powers of the part in which the inflammation occurs, being naturally weak, as in fibrous membranes, the scrotum, &c. 2. The remote supply of blood or nervous energy, as in the lower extremities. 3. Obstruction to the return of blood. 4. To the supply of blood. 5. Disease in the heart or vessels. 6. Debility from age, habits of life, disorder of the digestive organs, or fever. 7. Poor living, foul air, improper food, scurvy, &c. 8. Impairment of organization from external injury. 9. Of the nervous power by poisons. 10. Undue excitement of weakened parts. 11. Depressing remedies. 12. Pressure and tension. 13. Excessive violence of inflammatory action. 14. Peculiar disposition in the constitution.— (*James on Inflammation*, p. 102.)

Healthy phlegmonous inflammation seldom ends in mortification, except when it is unusually violent and extensive.

Of all the inflammatory complaints to which the system is liable, phlegmonous erysipelas is observed most frequently to terminate in gangrene.

### *Symptoms.*

Gangrene, or mortification, then is a partial death, or the death of one part of the body, while the other parts are alive: it is produced either by excess of inflammatory action, where the powers are natural, or by a less degree of inflammatory action, where the powers of the part are feeble.

In mortification, or gangrene, the arteries, enfeebled by excessive action, or incapable, from any cause, of carrying on circulation, are deprived of their vitality, the blood coagulates in them, and the death of the part is produced.

The symptoms of gangrene differ according to the manner in which it is produced.

Authors have generally distinguished mortification into two stages; the first or incipient one they name *gangrene*; the second or latter stage, that is, when the part has become quite cold, black, fibrous, incapable of moving, and destitute of all feeling, circulation, and life, is termed *sphacelus*.

When gangrene is the result of high and active inflammation, the pain attending its production is exceedingly severe; the inflammation is very extensive; there is usually a blush to a considerable extent; and there is generally, though not always, a considerable degree of swelling.

Under these circumstances, the secretion from any sore which may exist, ceases; for the skin no longer perspires. The surface of the skin becomes of a dark colour; it is said to become purple, but it is rather of a brownish tinge. The cuticle is raised; a vesication is produced, and when this breaks, it is found to contain a bloody serum. When the serum is discharged, the skin assumes the gangrenous appearance, and becomes perfectly insensible. The vesications extend to parts beyond the ulceration.

The constitution suffers considerable derangement from gangrene;



there is a high degree of irritative fever—quick, very small, and thready pulse; generally irregular—usually delirium, and it is also attended with vomiting and hiccough.

Hiccough is the characteristic sign of gangrene, situated in whatever part of the body it may be. The fact is, that when gangrene arises from a diseased state of the constitution, the stomach is extremely deranged, and this derangement of the stomach is followed by a spasmodic contraction of the diaphragm, producing hiccough. Hiccough may be arrested for a time, either by cold water, or a slight stimulant.

We have just related the symptoms when gangrene is the result of excessive action; we will therefore proceed to speak of it when it is the effect of a low degree of inflammation; as from cold, or any other analogous cause.

When a great degree of cold has been applied to any part for a considerable time, the part will become benumbed; that is, its nervous powers will be diminished; and when it is thus enfeebled, it will be unable to bear a very slight degree of supervening inflammation, so that gangrene will be produced.

When you receive cases of this kind, be cautious that heat is not too suddenly applied; for even the common heat of the bed, frequently occasions inflammation, which is extremely liable to proceed to gangrene, in consequence of the diminished nervous influence of the part.

When gangrene is the result of either circumstance we have mentioned, the process of separation soon takes place, and it is one of the most curious operations of nature, in the human body.

Under its influence, even large members are destroyed, without any danger from hemorrhage, or the smallest jeopardy to life.

When the process of separation takes place, the first appearance we observe is a white line; at this white line, the cuticle is raised, and in a day or two separates, leaving a chasm between it, produced by the absorption of the living skin in contact with the dead:—the next part that begins to separate, is the cellular tissue immediately under the skin; afterwards the muscles nearly opposite the edge of the skin. Tendons, like the cellular tissue, do not separate opposite the skin, but at a considerable distance from the part at which the sloughing takes place; for tendons are incapable of resisting the inflammation. The nerves separate in the same manner as the muscles; the arteries and veins become as it were hermetically sealed with coagulum, and also suffer in the general destruction; and lastly, the bones themselves exfoliate, and the limb is completely removed.

Since the *white line* alluded to, is the barrier which nature sets up between the dead and the living parts, it is anxiously looked for by the surgeon, as it becomes a criterion of the cessation of mortification. The elevation of the cuticle at the *white line*, is a vesication which forms a line of circumvallation around the gangrene. The living skin taken up by the absorbents is carried into the constitution; the absorbent vessels act on the living parts, but not on the dead; nor is the dead skin absorbed after the time when granulations have formed, but it becomes loose, and ceases to be attached to the surrounding parts; the chasm formed by the absorbent vessels affording an opportunity for separation. Gangrene proceeds to much greater

extent in the cellular tissue, than in the surrounding skin, because the cellular membrane is a part of weaker living powers; it is for this reason that a sloughing disposition in sores extending to the cellular membrane is so dangerous. Wherever skin separates, the muscles give way; a line of separation is formed, and the living portion of muscle is taken from the dead. Bones are very slow in the process of exfoliation; hence they are often taken away, when the process of separation is in other respects complete.

During the progress of mortification, nature has provided against hemorrhage, on the destruction of the blood-vessels, so that even the larger arteries are cut through without any bleeding, or danger of the patient's life.

This happens in the following manner:—The blood in the vessels of the dead part becomes coagulated; the coagulum, however, does not confine itself to the dead part, but extends to the living vessels which join it, and is, in this manner, glued to the inner side of the artery, so that the vessels are, as it were, hermetically sealed. The same thing takes place in veins, the coagulum adhering to the inner side of the living vein, so that no blood can escape. The arteries are not only sealed at the part through which nature cuts it, but at a considerable distance above it, in order to provide against the danger which would otherwise arise from a separation of the coagulum.

Gangrene is frequently the effect of a debilitated state of constitution: whatever, in short, weakens the general health much, disposes it to the production of gangrene; for the body, when thus debilitated, cannot bear any excess of action. It is also sometimes depending on an impeded circulation, whether arising from cold, from pressure, or from a want of natural strength in the circulation, so that the parts are not nourished in their accustomed manner.

It may be stated as a general principle, that gangrene generally arises from inflammation, and is occasionally the consequence of disease unaccompanied with inflammation, by which the circulation is considerably impeded.—(*Cooper.*)

#### PROGNOSIS.

Mortification is always to be esteemed the worst termination of inflammation. The circumstances which lead to a prognosis of a favorable event, are—youth and strength of constitution,—the general system little affected by the local disease,—the pulse continuing full,—there being little irritation; a disposition to a separation of the sound from the diseased parts; marked by a white line, somewhat elevated, distinctly bounding the latter, about which an oozing of a serous fluid is observed.

*Indications.*—To prevent the extension of the mortification, and to promote a separation of the dead parts from the living.

When mortification is acute, and seems to depend on the violence of inflammation, the first indication is to moderate the inordinate action of the sanguiferous system, by the prudent employment of such means as are proper for counteracting inflammation. In short, relief is to be sought in the antiphlogistic regimen, which consists in the employment of purgatives, diaphoretics, and diluents, and in

abstinence from all vegetable or animal substances, which have a tendency to excite, or to augment the febrile action. This regimen must be pursued as long as inflammatory fever continues. It is only in cases in which the fever from the first assumes a typhoid character, or where the mortification takes place without the previous occurrence of fever, that any deviation from the antiphlogistic regimen can be allowed. While genuine inflammatory fever and local inflammation are co-existent with mortification, antiphlogistic means are undoubtedly useful; but great caution is requisite since, in cases of humid gangrene, as it is termed, the inflammatory state very soon changes into one in which the great feature is prostration of strength. A very essential and important indication to be fulfilled as soon as the symptoms announcing the existence of the inflammatory state, appear to abate, and the patient begins to be debilitated. This indication is *to prevent excessive weakness by the suitable employment of cordials, and particularly of tonics.* These same means also contribute to place the system in a proper state for freeing itself from the mortified parts, or in other words for detaching them. For inflammation is the preparatory step which nature takes to accomplish the separation of mortified parts from the living ones, and this salutary inflammation cannot take place if the energies of life be too much depressed.

#### Treatment.

When inflammation has been properly treated, it will seldom, or never, terminate in mortification. But when called to treat it, our object should be to arrest and prevent any further extension of it by means both local and constitutional. If it be connected with, or dependent on inflammation, means must be taken to subdue that inflammation. If debility of the system has been a predisposing cause, it must be remedied by a more wholesome regimen, and the strength of the patient must be supported by stimulants, such as wine and a nutritious diet. Tonics also should be administered, and the *wine bitters* may be taken, and occasionally a glass of *yeast*.

*Local Applications.*—When blisters, or *visicles*, appear upon the part showing a disposition to gangrene, or when sloughing actually takes place, the following poultice will separate the living from the dead parts, and put a speedy check to it. Take *yeast*, a sufficient quantity; stir in *slippery elm bark*, to form a poultice of the proper consistence. Apply tepid, and often renew.

This will correct the factor of the parts, and assist the powers of nature to separate the mortified from the living flesh. I have not known this application to fail in a single instance.

It is now customary to amputate a limb in cases of mortification; but with what propriety, I am unable to decide, as it is very easily arrested by very simple means; and where it cannot be, I have no evidence that the knife would save the life of the patient. If a proper course of treatment will not cure, there will be such a faulty state of the constitution, or in the ulcer or wound itself, that should amputation be performed, the stump will slough, or the patient will sink from irritation, or the direct consequence of the operation.

It does appear to me passing strange, that surgeons should direct us to wait till mortification has stopped, before we amputate. We



are directed to remove a limb for mortification, and at the same time, we are directed not to do it, until this very mortification is arrested, or until a line of demarcation is formed, or a separation takes place between the dead and living parts!!

Now, I ask, how can this doctrine be reconciled with reason, common sense, philosophy, or correct principles of surgery. It does appear most absurd to me, however it may appear to others, and this absurdity and inconsistency, is more strikingly exemplified in practice, or at the bed-side of the patient.

I shall here subjoin the remarks of Cooper, on gangrene, who, though a great advocate for the knife, is not quite so partial for amputation as some of his cotemporaries. He remarks as follows, on the propriety of amputation in gangrene:

*Propriety of Amputating.*—As to the propriety of amputation in these cases, says he, there is sometimes no occasion for amputation in gangrene when the sloughing process is proceeding favorably, as you have an opportunity of seeing, in a man in the other Hospital, in whom nature has performed the operation herself, without any assistance; if the surgeon will be content to wait a short time, and the patient be so disposed, you will find that the parts will separate without an operation. Nature adopts the very plan in her amputations which the surgeon pursues; the skin separates the longest, the muscles next, and then the tendons, together with the bones, which are left considerably shorter than the other parts, as you may observe from the specimen on the table; the bones become covered by the skin, and the muscles surround the extremity of the bone. The cases in which you are required to perform the operation of amputation are those in which the patient is unable to sustain the constitutional derangement produced by the process of separation; but when the constitution is strong, the patient will bear the process required to separate the limb. You have an opportunity of seeing in the other Hospital at present, in the case to which I have so often alluded, separation taking place above the centre of the leg; there is no absolute necessity to amputate under such circumstances, and you can give the patient a chance of his life without resorting to it. In constitutional gangrene, as a general principle, do not amputate till the sloughing process has commenced, and healthy granulations are to be seen on the sore; for if an operation be performed, the stump will assume the same appearance and become gangrenous. It is curious to see how the loss of a slight quantity of blood will destroy life in these cases. When I was a dresser at these Hospitals, during my apprenticeship, there was a case of sloughing opposite to the calf of the leg; Mr. Cline, my old master, on going round the wards, said to the dresser, that the projecting ends of the bone had better be removed; there were some granulations between the bones, which, in sawing, the dresser did not observe, and he cut through them; a slight hemorrhage ensued, and in the same night the patient died. There was a case, in the other Hospital, in which the operation of amputation was performed; gangrene existed on one foot, a slight gangrene on the nose, and on the other foot: the leg was amputated; but the gangrene spread on the nose and foot, which before the operation, were only slightly affected. Amputation, then, should never be performed



till the constitution be in an improved state, and healthy granulations have appeared.

With regard to its *treatment*, continues Cooper, a poultice composed of port wine and oatmeal, or stale beer grounds, will be found the best *local* application; and the *internal* remedies should consist of opium, combined with ammonia. You must not expect that these cases will generally recover. I have known, however, a single toe, all of them, and even a portion of the foot, slough, and yet the patient do well. In these cases you must not amputate; whether there be healthy granulations or not, do not amputate; for as surely as you do, mortification of the stump will supervene, and death quickly ensue. During the sloughing process, says he, the nitric acid may be employed, in the proportion of fifty drops to a pint of water.

Amputation, says a distinguished professor, was long regarded as one of the most effectual means which could be employed to prevent the extension of gangrene. This practice, however, has not received the sanction of experience: on the contrary, it has been generally found, wherever it has been practised, in either acute or chronic gangrene, to accelerate much the progress of the disease; and in this way to hasten the death of the patient. The parts which were divided in amputation, though at a distance from a spreading gangrene and from sphacelus, were found speedily to assume the appearance of the affection for which the operation had been performed.

According to Richter, there is never any certainty that we are amputating in living parts. Mortification rapidly ascends along the cellular substance surrounding the large blood-vessels, and is frequently much more extensive internally than external appearances would lead one to suppose. The adjacent surface, still apparently alive, is often so affected that it must inevitably slough, though at present it may not actually have sphacelated. The surgeon imagines that amputation is performed on living parts, but soon afterward discovers that he has been dividing those which are dead. The operation, he observes, can do no good, while the mortification is in a spreading state, and it may do considerable mischief. The disorder continues to extend, because its cause still operates, and this is not removable by amputation. If the operation be now injudiciously undertaken, the sphacelus invades the wound, and is the more certainly mortal, as the stance has been farther weakened by amputation and its consequences.

Many mortifications, especially those which arise from external causes, very often spontaneously stop and separate. But the place where this will happen can never be foreseen. By amputating in this circumstance we run the risk of disturbing nature in her salutary work, and rendering the disorder fatal.

When the toes are to all appearance, perfectly mortified, and seem so loose as to be capable of being easily taken away, it is in general thought right to remove them. But however loose they may seem, if they be violently twisted off, or the parts by which they hang be divided, a very considerable degree of pain will most commonly attend such operation, which therefore had much better be avoided; for Mr. Pott has seen this very pain thus produced bring on fresh mischief,

and that of the gangrenous kind. If the patient does well, these parts will certainly drop off; if he does not, no good can arise from removing them.

The application of a *ley poultice* has proved a sovereign remedy in mortification. It is not only well calculated to prevent, but cure it when it has taken place. After having been applied a short time, it has often separated and detached large portions of mortified flesh, and brought about a healthy action. The *elm bark* should be mixed in *leached weak ley*, and applied tepid.

A case now occurs to me, where this poultice arrested the disease, seated on or near the breast of a female, and detached such a portion of dead flesh, that the opening left was as large as a common sized teacup.

Another case occurs to me, where a young man was to have had his leg amputated, but before his surgeon or the physician came, the above poultice was applied, which arrested it, and he recovered.

Dr. Ferris, who was noted for a successful method of treating mortification, made use of the following poultice:

Scraped Carrots,  
Spikenard Root, bruised.

Boil till soft; stir in a small quantity of Indian or oat-meal, and apply warm. I have used this poultice but little, and therefore cannot speak with much certainty of its effects; but in one very difficult and critical case of inflammation, bordering on gangrene, it changed the character of it, and was attended with a good effect.

In all cases of mortification, every thing which heats, irritates, or adds to the patient's sufferings, appears, in general, to augment the disorder and increase the rapidity of its progress. On the other hand, every thing which tends to calm, assuage, and relax, frequently retards the progress of mortification, if it produce no greater good. The pain also, which is a constant mark of too much irritation, contributes of itself to increase such irritation, and in this double point of view, we cannot do better in the majority of cases, than endeavour to appease it by the judicious and liberal use of anodynes. When the inflammatory stage evidently prevails, this medicine may be conjoined with antiphlogistic or cooling remedies.

The feet and surface should be often bathed, as this operation contributes much to the cure, by its positive good effects upon the system.

The observations of Pott on the local treatment of these cases, are of great practical importance:

"I have found (says he) more advantage from frequently soaking the foot and ankle in warm milk, than from any spirituous or aromatic fomentations whatever; that is, I have found the one more capable of alleviating the pain which such patients almost always feel, than the other; which circumstance I regard as a very material one. Pain is always an evil, but in this particular case, I look upon it as being singularly so. Whatever heats, irritates, stimulates, or gives uneasiness, appears to me always to increase the disorder, and to add to the rapidity of its progress; and, on the contrary, I have always found that whatever tended merely to calm, to appease, and to relax, at least retarded the mischief, if it did no more."

It is customary to facilitate with a cutting instrument, the mortified parts before the process is completed by the efforts of nature. This practice is very injurious, and ought to be strongly reprobated, causing unnecessary pain and creating considerable risk. When assistance is given, no irritation should be excited.

I shall conclude this chapter on Mortification, by quoting the remarks of Dr. Cuming, on the use of nitre, and abuse of bark, in mortification.

"After our attempts at resolution have proved unsuccessful, our next endeavours are, 1st. To produce a separation of the dead from the living parts. 2nd. To prevent absorption of putrid virus during the putrefactive process. 3rd. To cicatrize the wound and support the strength of the patient. In order to produce a separation of the dead from the living parts suppuration is requisite, which we effect by fomentations and poultices. Large quantities of bark in substance have hitherto been administered, from an erroneous notion that this drug had a peculiar and specific effect in arresting the progress of, and curing the sphacelus, which I shall soon prove to be an opinion founded upon error, and supported merely from *arbitrary custom* and *prejudice*. The part should be well washed at each dressing, which must be renewed at least four times in the twenty-four hours; for, notwithstanding the utmost cleanliness, in a warm season of the year, or in a tropical climate, the fætor and stench issuing from it is intolerable. A portion of the mortified part is cut away at every dressing, as much as can be removed, after which Bark and spirituous medicaments have been spread upon the surface of the poultice or sprinkled over the part, and yet strange to tell all these means have not been sufficient to prevent the effects of absorption, or to destroy the fætor, which Kali Nitratum or Nitre most undubitably does, and which I have styled a sovereign remedy. Though there is no possibility of causing a spontaneous separation to take place without the aid of warmth, there is reason to suppose that it has always added to the malignity of the disorder, by the well known property which it possesses of exciting fermentation, and which necessarily keeps up and augments the putrefactive process; indeed much philosophical sapience is not requisite to convince any one of the truth of this: therefore as Nitre counteracts the effects of heat as far as it is conducive to putrefaction, by rendering the dead mass unsusceptible of its baneful influence, and by correcting it and entirely subduing it when it has already taken place, the fomentations and poultices can now be most advantageously employed. The separation will be accelerated by a generous stimulating diet, consisting of strong beef soups and jellies, a moderate allowance of generous port wine, good mild ale or porter should be drank, and the patient's spirits kept up by the most positive assurances of a happy termination to his sufferings; for which purpose the company and cheerful conversation of his friends and acquaintances, will now be very conducive. Bark given in substance and in the quantities recommended by men whose practice and experience in such cases, one would suppose were not greater than their penetration, I know from the most correct and sure observation, to be productive of the



most calamitous consequences, which I shall soon particularize. When the appetite is good, a nutritious and easily digested diet, will, without the aid of medicine, answer every purpose. The decoction of Bark, agreeably acidulated with the Elixir of Vitriol, may be advantageously employed. How often do medical men, through a blind and slavish acquiescence to imperious custom, defeat the salutary, though slow and sure operations of nature? The second indication for the prevention of the absorption of virus, during the putrefactive process, is fulfilled by cleanliness from frequent ablution, and sprinkling finely pulverized Nitre over the part which should be scarified either superficially or deeply, according to the judgment of the surgeon, or depth of the disease. And here I must remark, that the evil so much dreaded formerly, of wounding the parts underneath possessed of vitality, and thereby exciting absorption with all its train of calamitous consequences, need now no longer be feared, as Nitre neutralizes and renders innoxious the deadly poison."

The third indication, for cicatrizing or healing the wound, and supporting the strength of the patient, is answered by a full diet and such modes of dressing as are found to be most effectual.

The first time I had recourse to Nitre, as a remedy for Sphacelus, (which may justly be termed a sovereign one) was whilst I was surgeon of his majesty's ship *St. George*; it was applied to a man's foot, which was wounded with a cannon-shot in an action off Cadiz; a mortification took place soon after the accident, owing to the irritation of splinters or spicula impacted in the tendinous and nervous parts (so small as not to be discovered at first) and the destruction of the soft parts. The usual remedies were had recourse to, such as washing the mortified parts with Spt. Terebinthinæ, Vini, &c., vinegar and fomentations of bark, but without perceiving the smallest benefit resulting from their application. The fætor emanating from the wound which was black and cadaverous, was not at all corrected, nor was any separation of the sphacelated parts perceptible; on the contrary the disease was spreading all over the foot. In this dilemma revolving in my mind the various antiseptics which the materia medica afforded, I luckily thought of Nitre, and began to use it very finely pulverized in large quantities, sprinkling it all over the wound, covering it so perfectly as to make some degree of pressure without soiling my fingers, for the purpose of promoting its union with the mortified parts; the wound was dressed three times a day, as the climate was warm, and the danger from absorption consequently great. In the course of twelve hours the disagreeable stench issuing from the wound, which before was so extremely offensive as to make the nurses sick, was now quite gone, the extent of the mortification was soon discovered by a line of separation surrounding the wound. Here the beneficial effects of Nitre were very evident, both as far as related to its antiseptic, as well as stimulant power; the former in subduing putrefaction, the latter by restoring energy and activity to the living sub-latent parts, sufficient to enable them to throw off the cause.

It may seem unnecessary to mention that as much of the parts as could be removed by the assistance of the scissors and forceps were taken away at each dressing, and the wound well washed sometimes with vinegar, and at other times with decoction of the bark.

By perseverance and strict attention to the above remedies, particularly the Nitre (though the patient was reduced to the lowest ebb of *human misery* which was sufficiently evinced by symptoms the most distressing and alarming, such as yellowness of the skin, a black furred tongue, tetanus, and some degree of locked jaw, extreme debility, quick and fluttering pulse,) he was restored to health contrary to the expectations of all who saw him.

I found in this case, as I have done in many others, the exhibition of bark in substance do great mischief, though not given to near the extent recommended by medical writers. One would imagine these authors were afraid of deviating from the paths of their predecessors, when they are found slavishly subscribing to their rules, whilst the conviction of their own experience should convince them of the folly and even criminality of recommending medicines, which cannot boast of that consequence or efficacy, which they have laboured to bestow upon them.

It generally happens, as it did in this instance, that though the patient previously to its administration, may have some appetite, it soon fails, and the space of a few hours entirely deprives him of all inclination to eat, his fever increases, and he loaths every thing offered to him in the shape of food.

This is not the worst consequence, the medicine at length proves so nauseating and disgusting, that the stomach, as if conscious of the violence done to it, arms itself with the resolution of rejecting this inhospitable and noxious tenant. Such is the method employed by the *vis medicatrix naturæ* (if there be such a power) to rid herself of matter so heterogeneous and offensive to this delicate organ, the *primum mobile* of the system.

Nor can it be wondered at, that this should happen, when you reflect on the indigestible nature of bark, however finely it may be pulverized.

The human stomach is not like that of the Ostrich, it will not digest iron; and it does not require much penetration to discover, that the digestives faculties of this noble organ, are greatly impaired by disease. Then how can it be supposed that a substance which with the greatest propriety may be termed foreign, should not prove injurious, when other things, mild and congenial to it in a healthy state, are now offensive? It is not my wish to have wrong inferences deduced from these observations, I have said enough to convince that I am inimical to the exhibition of bark in substance, yet I would not have it imagined that it cannot be employed with advantage in any form; indeed I think far otherwise, for I am persuaded that it is of great service when given in decoction, for then you can augment or diminish its strength without clogging up the stomach with a heterogeneous mass of indigestible matter; an advantage which will appear to every unprejudiced mind, of the greatest importance, as far as relates to the welfare of the patient and success of the surgeon, whose anxiety must ever be commensurate with the danger and difficulty of the case.

During the peace subsequent to the treaty of Amiens, whilst I was in practice, I had the care of two very bad cases of Sphacelus, which I treated in the manner already mentioned, with the same success, and the same corroborating proofs of the amazing efficacy of Nitre. The



first cause was that of a female who had an ulcer on one of her legs, which, from want of medical aid and other comforts, degenerated into a state of sphacelus. The other was the worst, and occupied a space of nine inches on the external part of the forearm and hand, the integuments, fascia, and part of the muscles were completely destroyed, as well as the extensor medii digiti tendon, and though the mortification was so very extensive, the repeated application of powdered Nitre prevented the mass of humours from being corrupted by the absorption of putrid viris.

It appeared very evident at every dressing, that it had perfect command over this disease, by entirely subduing the cadaverous factor which always exhales from mortified parts. It is worthy of remark that the patient's stomach was very little affected, he was enabled to take in a sufficient quantity of nutriment, which would not have been the case, if absorption had taken place, or his stomach had been loaded *with huge doses of bark*. He took Decoct. Cinchonæ and was allowed strong beef soup, with a liberal quantity of port wine and mild ale.

I the other day in a conversation with a physician in London of great eminence, respecting the administration of bark in cases of sphacelus, was happy to find his sentiments exactly in unison with my own; and he was, through fatal experience, thoroughly convinced of the folly of the fashionable practice of throwing in large quantities of bark in substance. For he was visiting a patient affected with mortification in conjunction with a surgeon, who was of opinion that too much of this drug could not be given, though the patient's appetite was already destroyed by its effects and those of the disease; yet my friend though he represented to his coadjutors, his opinion of the impropriety of continuing the bark in substance, remained passive, not wishing to stem the torrent of popular prejudice, or take the power out of the surgeon's hands, when he conceived the case to be more closely affianced to surgery, than physic. I need hardly remark that the case terminated fatally. My patient's complaint arose from a small pimple on his hand, which became so troublesome that he was induced to apply to a famous empiric, whose skill was so perfectly baffled in this case, that he was constrained to acknowledge from the black, blistered, swelled, and frightful appearance which the patient's hand and arm exhibited, that the case required more of the acumen chirurgicum than he could boast of, and recommended his poor suffering deluded patient to apply for further advice, as mortification had already taken place. Nor was it surprising considering the treatment which had been adopted, white lily root, and a variety of acrid substances were applied to assuage a most active inflammation.

It has lately been ascertained that the nitrous acid gas possesses the power of destroying contagion, on which account government supplies the navy with materials and utensils necessary for the purpose of fumigation.

It has often happened that malignant ulcers exposed to the action of the fumes have been converted into a mild state, and easily cured, yet having a knowledge of these circumstances, I must confess that I was not induced to use this remedy from any analogical inference striking my mind; but from the simple idea after a fruitless struggle to subdue

the factor issuing from a sphacelous foot, that as Nitre was found to preserve animal substances from putrefaction, it might also arrest its progress when commenced ; and such has been invariably the result, in cases which have come under my care. Some of my medical brethren in the navy have lately informed me, that they experienced the same salutary effects from its use in cases that occurred at naval hospitals, which I shall forbear to particularize, and shall content myself by noticing a part of Mr. Simpson's letter of Skipton, in the fourth number of the 13th vol., page 324 of the Medical Journal."

"Gentlemen,—I am induced to request you will allow me, through the medium of your widely extended and truly valuable publication, to return my sincere thanks to Mr. Cuming, for his recommendation of *nitre*, Medical and Physical Journal for April and December 1804, in cases of sphacelus. I have recently had a case of that description, where every effort to relieve the patient proved fruitless ; until I resolved upon the application of nitre, in which I was seconded by my very respectable and ingenious naval friend Mr. Birtwhistle of this place.

Having frequently experienced very good effects from the external application of crude sal ammoniac finely powdered in similar cases, and having previously formed - - - - - of Mr. Cuming from his style of writing which I have repeatedly seen in your Journal, I was led to resolve upon giving a fair trial to nitre. I am happy in having it in my power to say the effect was favourable beyond my most sanguine expectation.

It would be superfluous to trouble you with the minutiae of the case, suffice it to say the whole class of stimulants and antiseptics were tried internally and externally ; notwithstanding, the putrid diathesis increased daily until arrested by this "sovereign remedy." I shall conclude with joining Mr. Cuming in most strenuously recommending this invaluable medicine to the public, as one which I flatter myself will ultimately prove deserving their confidence and attention."

C. SIMPSON.

## CHAPTER III

### OF WOUNDS.

#### *Description.*

By a wound is meant a recent solution of the continuity of the animal solid, from external violence.

<i>Species,</i>	{	1. Incised.
		2. Laceratell.
		3. Contused.
		4. Punctured.
		5. Poisoned.
		6. Gun-shot.

Wounds in general are subject to a great deal of variety, both in their nature and external appearance. The differences depend, in a great measure, on the nature of the injured parts, the manner in which the wound has happened, and its extent.

Wounds of fleshy parts are exceedingly different from those of tendinous ones, both in regard to their appearance, and nature, and the degree of danger. There is also an essential difference, between such as are made with a sharp cutting instrument, and others, in which the fibres, besides being divided, have suffered considerable contusion and laceration. A wound, made with a narrow-pointed instrument, is also of a very different nature from one that has an ample orifice.

The degree of danger attending every wound, depends very much on some of the following circumstances. The extent of the injury; the additional violence, which the fibres of the part have suffered, besides their division; the nature of the blood-vessels, or nerves, which happen to be cut; the nature of the wounded part, in respect to its general power of healing favourably, or not; whether the operations of the system at large, and life itself, can be well supported, or not, while the functions of the wounded part are disturbed, interrupted, or suspended, by the accident; the age of the patient; the constitution; and the opportunities, which there may be of receiving proper aid, and assistance of every kind.

#### *Progress of Spontaneous Union.*

*By the first intention.*—When the edges have separated only to a certain distance, or still remain in opposition, a portion of blood is thrown out from the incised orifices of the arteries, by which the chasm is filled. The lips of the wound become tumid and painful, a slight inflammation ensues, under which vessels shoot into the inorganized coagulum; this soon becomes endued with life, and thus a complete union is effected.

*By Suppuration.*—When, however, from the nature of the part, or from other causes, the edges have retracted to a considerable extent, this species of union is prevented from taking place, suppuration supervenes, pus is formed; granulations arise, and, increasing, fill up the cavity; and, having attained the surface, healing commences, processes of skin shoot from the surrounding edges, and extending, at length completely enclose the newly-formed parts.

#### PROGNOSIS.

The prognosis will chiefly depend upon the situation (see wounds of the different parts of the body), and the extent of the wound.

*Unfavourable circumstances* are—great irritability of constitution; the constitution of the patient impaired by age, or inebriety; debility, however induced; the division of large arteries, or of numerous absorbent vessels; the firm texture of the part favouring a considerable retraction of the edges; the presence of certain extraneous bodies, which cannot be readily removed; too great inflammation, when sphacelus is likely to ensue; deficient inflammation, when the progress of union is retarded, or entirely suspended.

#### *Incised Wounds.*

A wound inflicted by a cutting instrument; and in which there is a simple division of the part, without any, or any considerable loss of substance. The usual and immediate consequences are,—a greater or less retraction of the divided parts according to the texture of the particular portion of the body which is the seat of the accident; and a discharge of blood proportioned in quantities to the size of the injured vessels.

#### *Contused and Lacerated Wounds.*

Lacerated wounds are those, in which the fibres, instead of being divided by a cutting instrument, have been torn asunder by some violence, capable of overcoming their force of adhesion. The edges of such wounds, instead of being straight and regular, are jagged and unequal.

The term *contused* is applied to those wounds, which are occasioned by some blunt instrument, or surface, which has violently struck a part of the body.

These two species of wounds greatly resemble each other, and as they require nearly the same kind of treatment, writers usually treat of them together.

Lacerated and contused wounds differ from simple incised ones in appearing, at first view, much less alarming than the latter, while, in reality, they are more dangerous. In simple cut wounds, the retraction of the parts, and the hemorrhage, are generally much more considerable, than in lacerated wounds of the same size. However, notwithstanding these circumstances, they commonly admit of being healed with by far the greatest ease. It is even proper to remark, that lacerated and contused wounds are scarcely ever attended with any serious effusion of blood, even though some large blood-vessels may be



injured. This circumstance often leads inexperienced practitioners to commit great mistakes, by inducing them to promise too much in the prognosis, which they make. Surgeons, versed in practice, however, do not allow themselves to be deceived by the absence of hemorrhage, and, in proportion as there is little bleeding, they apprehend that the violence done to the fibres and vessels has been considerable. Whole limbs have frequently been torn from the body, without any hemorrhage of consequence taking place.

### *Punctured Wounds.*

A punctured wound signifies one, that is made with a narrow-pointed instrument, the external orifice of the injury being small and contracted, instead of being of a size proportionate to its depth. A wound, produced by the thrust of a sword, or bayonet, affords us an example of a punctured wound.

Wounds of this description are, in general, more dangerous than incised ones, notwithstanding the latter have the appearance of being by far the most extensive. The greatest degree of danger, in cases of punctured wounds, always depends on the additional injury, and rough violence, which the fibres have suffered, besides being divided. Some of the disagreeable consequences apt to follow, are also to be imputed to the frequent great depth, to which punctured wounds are liable to extend, in consequence of which circumstance, important parts and organs are often injured. These cases are likewise less easy of cure, owing to the difficulty of extracting any extraneous substances, which may happen to be lodged in the wound. All punctured wounds, and stabs, are at the same time dangerous, inasmuch as they are particularly liable to be followed by a great deal of inflammation, fever, deep-seated abscesses, sinuses, &c.

### *Gun-shot Wounds.*

Gun-shot wounds receive their name from the manner in which they are produced, being generally caused by hard, obtuse, metallic bodies, projected from cannons, muskets, or some other species of firearm. With such injuries, it is also usual to comprehend a variety of dreadful accidents arising from the explosion of shells, or the violence with which pieces of stones from ramparts, or splinters of wood on board of ship, are driven about. Gun-shot wounds are the most considerable of the contused kind; and what is to be said of them will apply, more or less, to all contused wounds, according to the degree of contusion. They are particularly characterized by what the French surgeons are fond of calling a *disorganization* of their surface. The excessive contusion and violence observable in gun-shot wounds depend upon the rapidity with which the bodies occasioning them are propelled. The parts touched by the ball are frequently converted into a blackish slough, the colour of which made our ancestors suppose, that bodies projected by gunpowder became heated, and actually burned the flesh with which they came into contact. But reason and experience have now proved, that whatever may be the rapidity of a projectile, it never acquires in its passage any perceptible heat. Indeed, a modern

writer asserts, that such a degree of heat as would be requisite to make a ball burn parts in its passage, would readily melt it.—(*Richerand, Nosographie Chir. t. 1, p. 217, edit. 2.*) In general, gunshot wounds do not bleed much, unless large blood-vessels be injured; their circumference is often livid; and the shock that attends their infliction, or the injury done to the nerves, may occasion in the limb or part a kind of torpor, sometimes extending itself to the whole system.

### Poisoned Wounds.

These are wounds inflicted by poisoned instruments; by the bites of rabid animals; or by the bite or sting of certain reptiles and insects.

The effect of wounds of this kind are various; some prove immediately fatal; some produce purple or livid eruptions on the body, and a putrid state of the fluids; some cause lethargy, but almost all cause pain, swelling, inflammation or ulceration.

#### TREATMENT.

*Indications of Cure,*

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| { | <ol style="list-style-type: none"> <li>1. To put a stop to the bleeding.</li> <li>2. To remove any extraneous bodies that may be present.</li> <li>3. To effect an union by the first intention or, if that be impracticable, to promote suppuration.</li> </ol> |
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### Incised Wounds.

Generally, a wound which is made with a sharp cutting instrument, is attended with the least danger of any other, as it heals by what is termed, the first intention, or, in other words, without suppuration, except, however, it is in the immediate neighborhood of some great blood-vessels, or vital organ.

The fibres, or parts, have only been simply divided, having neither suffered contusion or laceration; consequently they are less likely to inflame severely, or to suppurate or slough, and, properly treated, it unites again in a very expeditious manner.

In a recent simple incised wound, there are three objects which the physician should endeavour to accomplish without the least delay. The first, and that which requires his immediate interference, is the bleeding, which must be checked. The second is the removal of all extraneous matter from the surface of the wound. The third is the reunion of the opposite sides of the injury.

The first thing to be done, in the treatment of a simple incised wound, is carefully to examine it. Some are in the habit of giving every wound a most superficial attention, and then putting a bandage around it, when it may be in a most critical and dangerous state; when there may be extraneous substances in it, or where there is an effusion of blood in the cellular substance. Such practice cannot be too much deprecated. Every wound must be carefully and deliberately examined before any dressings are applied.

When the divided vessels are not above a certain size, the bleeding soon spontaneously ceases, and no surgical measures need be taken on this particular account. When the wounded vessels are even somewhat larger, and their situation is favourable for compression with a bandage, it is often advisable to close the wound and apply compresses and a roller, rather than have recourse to ligatures, which always create a certain degree of irritation and suppuration. Tying the bleeding vessels may be occasionally, perhaps, the only safe mode of proceeding. When the artery is of considerable size, and its mouth can be readily seen, the most proper instrument for taking hold of it is a pair of forceps. In applying the ligature, the surgeon must take care to pull its ends in such a manner that the noose will not rise above the mouth of the vessel, and for the purpose of altering the direction of the force employed in tightening the ligature, the ends of the thumbs are generally made use of. The tenaculum is commonly employed for taking up arteries, which are not large and distinct.

Where bleeding is profuse, recourse may be had to a ligature, placed around the limb, and drawn tight or twisted with a stick, until the blood ceases to flow and until the wound can be dressed.

I have never yet, in all my practice, had a single case, in which it has been necessary to tie an artery. The hemorrhage or bleeding, in most cases, will spontaneously cease, after a short time, by the formation of a clot or coagulum. But should a case occur where it becomes necessary to tie an artery, the ligature made use of may be strong thread or silk. The lips of the wound should be opened, and the blood washed away or absorbed by a cloth or sponge, to give an opportunity to see the end of the artery from which the blood issues, and, having ascertained it, the end is to be taken hold of with a pair of tweezers, forceps, or tenaculum, and drawn a little out, when the ligature must be passed around it, and drawn and tied very tight, and the ligature should be cut off before the wound is closed.\* This method is

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\* An hemorrhage, says a writer, may be stopped by simple pressure with the finger, compress, or bandage, if the wound be slight, or the hemorrhage trifling; but when a considerable artery has been divided, and the effusion of blood is copious, by the application of the tourniquet, in situations where its use is admissible, and by afterwards securing the divided vessel with a ligature.

In the *application of the tourniquet*, a small linen compress or cushion is to be placed over the course of the bleeding vessel, in the most eligible situation above the wound (see Amputation, where the proper positions for its application are pointed out), and secured by means of a roller passed two or three times around the limb. The instrument is now applied with its handle in a position opposite to the compress upon the vessel, and rendered firm by the strap to which it is affixed; after which, by turning the handle, and thereby tightening the compress, the hemorrhage will be restrained.

The next object is to secure the bleeding vessel; for which purpose two modes are practised: 1. by means of the tenaculum; 2. by means of the crooked needle. The former is now generally preferred.

The *tenaculum* is a curved hook, the point of which is to be passed through the coats of the divided vessel, which being pulled out beyond the surface of the wound, a ligature, composed of threads proportioned in number to the size of the artery, previously waxed, and loosely slipped over the instrument in the manner of a ring, is to be drawn by an assistant over its point, until it encircle the extremity of the vessel; when its ends are to be gradually, yet firmly drawn, so that the sides of the latter may be effectually compressed. It is then to be secured by a second knot, and the ends being cut off at a proper distance, are to be suffered to hang from the wound.

When, however, from the depth of the wound, or from the artery having retracted beyond the reach of the tenaculum, there is a necessity for using the *crooked needle*;

only to be practised in the most urgent cases, or where other means fail. I have read an account of a surgeon in Berlin, or some part of Europe, who, in amputating a leg, never takes up a single artery. This fact shows the wonderful provision of nature in arresting hemorrhage.

If the bleeding is so great as to prevent an accurate inspection of the wound, so that the vessel cannot be perceived, pressure must be made upon the trunk of the main artery, which supplies the parts with blood. It may be made with the finger, ligature, or tourniquet, which, after the wound has been cleansed, may be loosened in order to discover the bleeding vessel.

In the worst species of wounds to which I have been called, I have found the following treatment sufficient to stop the bleeding.

I first ascertain the situation of the vessel from whence the blood issues.—Then I take a pledget of lint, roll it up into a little ball, and press it directly upon the mouth of the artery, (I mean where there is profuse hemorrhage,) afterwards apply lint and small compresses to secure permanent pressure upon the artery, after which the dressings are to be applied.

In general, a piece of linen folded thick, of a suitable size, and laid directly over the wound, and a bandage applied, is quite sufficient to stop the hemorrhage. Occasionally, I have applied styptic powders to contract the end of the vessel, produce coagulum, and thus arrest it. For this purpose, the *red*, or *styptic powders*, are employed, a preparation which is extremely astringent. Cold, and lead water, by their astringent and refrigerant effect, are useful; the lint and compresses may be wet with them. We have made use of a styptic powder here, which a celebrated German physician, in New Jersey, has been for many years in the habit of successfully using. It is a plant pulverized, very astringent and styptic in its qualities, but I am unable, at present, to obtain the correct name of it, as the physician can only give some vulgar name. I hope soon, however, to obtain the botanical character of the plant; it is unquestionably the best vegetable production known of the kind.

The bleeding having been suppressed, the next object is to remove any extraneous matter, such as dirt, bits of glass, clots of blood, &c., which may remain in the wound. Were this circumstance neglected, the plan of uniting the opposite sides of the cut by the adhesive inflammation, or by what is more frequently termed, union by the first intention, would in general be frustrated.

As soon as attention has been paid to the foregoing indications, the practitioner must put the lips of the wound in contact, and take measures for keeping them in this state until they have grown firmly together. The sides of incised wounds are kept in a state of apposition, by means of an adhesive plaster, a proper position, the pressure of a roller, and, in a few particular instances, by the employment of sutures.

With respect to sutures, as they create pain, irritation, and some

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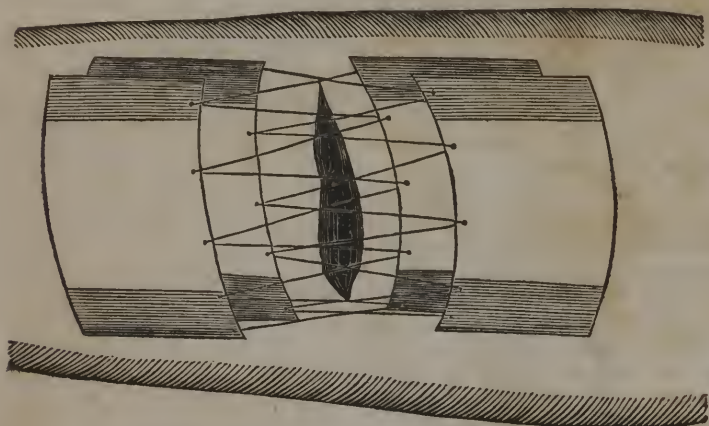
this armed with a proportionate ligature is to be introduced at about a quarter of an inch from the situation of the vessel, to be carried under it, and brought out at the same distance on the opposite side; and this being repeated, a knot is to be made as above directed.



degree of suppuration, they ought never to be employed when the parts can be kept in contact without them. However, certain cases may require them, and it is admitted by many, that in wounds of the ears, eyelids, nose, and lips, it is proper to use them.

To keep the surfaces of divided parts in contact, without sutures, and at the same time to admit of dressings, I have used, with great advantage and success, a very simple invention, or contrivance, which I have denominated the *Improved Adhesive, or Uniting Plaster*.

The following plate gives a representation of this admirable contrivance, or plaster.



It is made by taking four pieces of linen, of suitable size, and spreading each thinly over with adhesive plaster. They are then, or before they are spread, doubled, or one lightly placed above the other, to prevent immediate adhesion or close contact, after which the ends are brought within the distance of about an inch of each other, and stitched together in the following manner. A stitch is first to be taken in the upper piece; the needle must then be carried across, and a stitch passed through the lower one; then cross again and pass through the upper piece, and so alternately to the end. It must be applied in the following manner. The edges of the wound must be brought together, or in contact, and a plaster laid over it at right angles. The two under pieces, or strips, must be made to stick on or adhere to the skin, a short distance from the lips of the wound, in order to give sufficient room for the external dressing. After these adhere firmly, let the upper ones be gradually extended, which, as a matter of course, draws together the lower ones, and with them, the edges of the wound, and when drawn closely together, they likewise must be fastened or made to adhere to those immediately underneath, by which it will be perceived that the parts are brought closely together, permanently secured, and leaving room for dressings without any stitchings or sutures whatever, and to which, certainly, there are great and insuperable

objections. They prove a source of irritation and inflammation, so that it often becomes necessary to remove them. Besides, matter and blood collects underneath, which prove very injurious, rendering it often requisite to remove them; but by this improved bandage, these objections are obviated. There is an interspace left between the strips of plaster, by which means the matter can be discharged in case of suppuration, and the wound very conveniently dressed. After the bandage, or plaster, has been thus applied, a pledget of lint may be dipped in spirits, and applied over the wound, then a plaster of the *black*, or *healing salve*, is to be applied, over the whole; then, if the nature of the wound call for it, a bandage or roller should be used.

In this manner the fresh cut surfaces are brought into contact; and to preserve them quietly in this state, is the next great aim which the surgeon should have in view. The wounded part should be laid in the posture which was found the most favourable for approximating the sides of the cut, at the time of applying the dressings, and the patient should be directed to keep the part in a perfectly quiet state.

When attention is paid to these circumstances, it often happens that the two opposite surfaces of the wound grow together again in the course of forty-eight hours, without any degree of suppuration. The process by which this desirable event is accomplished is known by the name of *union by the first intention*. Besides the advantage of the cure being effected in this way with the greatest expedition possible, there is still another thing much in favour of constantly promoting this method of healing wounds, which is, that the scar is much less than after any other mode of treatment, and the part is covered with original skin, which is always much stronger than any which can be formed as a substitute for it.

It is wonderful with what celerity union by the first intention takes place under favourable circumstances. In the course of three days, a large wound is frequently healed.

The wound should be dressed occasionally, but in the commencement, the dressings may remain from one to three days, according to the feelings of the patient, and other circumstances. I have sometimes given it a superficial examination in one day; at other times, not till after the expiration of three days. No definite rule can be laid down upon this subject; it must be left to the good sense and judgment of the practitioner.

It is sometimes the case, that from some cause or other, more or less suppuration will follow, which will very much retard the healing process. When this is the case; when inflammation takes place, the salve or external plaster must be removed, and a poultice of the *slippery elm bark* applied, and after the inflammation has subsided, the salve or plaster to be again applied.

Should *fungus*, or what is termed "*proud flesh*," arise and prevent the wound from healing, it may be sprinkled with a little pulverized blood-root. If this is insufficient to remove it, a few grains of the vegetable caustic must be daily applied.

#### *Contused or Lacerated Wounds.*

In many wounds which are not attended with contusion, when we either know or suspect that extraneous bodies have been introduced

into the wound, union by the first intention should not be attempted, but they should be allowed to suppurate, in order that the extraneous matter may be expelled. Wounds which are attended with laceration, although free from contusion, cannot always be united by the first intention; because it must frequently be impossible to bring the external parts or skin so much in contact, as to prevent that inflammation which is naturally produced by exposure. But even in cases of simple laceration, where the external influence is but slight, or can be prevented, we find that union by the first intention often takes place; the blood which fills up the interstices of the lacerated parts, having prevented the stimulus in them, and also suppuration, may afterwards be absorbed.

Many of the remarks on the treatment of simple and incised, are applicable to lacerated wounds. There is not, however, much difficulty about bleeding or hemorrhage, there very seldom being much present; but the same attention must be paid to the removal of extraneous substances from the wound, after which the parts must be brought in contact, or as closely together as possible, and if the bandage above mentioned, cannot be continually applied, the parts may be kept together by narrow strips of adhesive plaster; afterwards a pledget of lint, wet in spirits, may be applied, and if there is little or no inflammation present, the *black plaster*, or *healing salve*, should be spread thin upon a piece of linen, and applied, not only over the wound, but to some distance on the adjacent parts or around it. Should swelling or inflammation take place, this plaster must be immediately removed, and a poultice of the *slippery elm bark* is to be applied until they subside, when the salve or plaster may be again used.

Attention should be paid to the constitution, and such medicine and diet prescribed as will serve to allay irritation. The bowels must be kept open, perspiration promoted, and a cooling regimen recommended.

### *Punctured Wounds.*

Wounds of this description are in general infinitely more dangerous than cuts, notwithstanding the latter have the appearance of being by far the most extensive. In cases of stabs, the greatest degree of danger always depends on the injury and rough violence which the fibres have suffered, in addition to their mere division. Many of the disagreeable consequences are also to be imputed to the considerable depth to which these wounds extend, whereby important parts and organs are frequently injured. Sometimes the treatment is rendered perplexing by the difficulty of removing extraneous substances, as, for instance, a piece of the weapon which has been left in the wound. Lastly, experience proves that punctured wounds and stabs are particularly liable to be followed by a great deal of inflammation, fever, deep-seated abscesses, sinuses, &c.

A strange notion seems to pervade the writings of many systematic authors, that all the danger and disagreeable consequences of punctured wounds depend entirely upon the narrowness of their orifices, so that suitable applications cannot be introduced to their bottom. Hence, it is absurdly recommended to dilate the opening of every stab, with the view, as is generally added, of converting the



accident into a simple incised wound. Some of these writers are advocates for making the dilatation with a cutting instrument, while others, with more propriety, propose to enlarge the opening with tents.

Certain authors regard a punctured wound as a recent sinus, and, in order to make the inner surfaces unite, they recommend exciting a degree of inflammation in them, either by means of setons or injections.

If the notion were true, that an important punctured wound, such as the stab of a bayonet, could be actually changed into a wound partaking of the mild nature of an incision, by the mere enlargement of its orifice, the corresponding practice would certainly be highly commendable, however painful. But the fact is otherwise: the rough violence done to the fibres of the body by the generality of stabs is little likely to be suddenly removed by an enlargement of the wound. Nor can the distance to which a punctured wound frequently penetrates, and the number and nature of the parts injured by it, be at all altered by such a proceeding. These, which are the grand causes of danger, and of the collections of matter that often take place in the cases under consideration, must exist, whether the mouth and canal of the wound be enlarged or not. The times when incisions are proper is, when there are foreign bodies to be removed, abscesses to be opened, or sinuses to be divided. To make painful incisions sooner than they can answer any end, is both injudicious and hurtful. They are sometimes rendered quite unnecessary, by the union of the wound throughout its whole extent without any suppuration at all.

Making a free incision in the early stage of these cases undoubtedly seems a reasonable method of preventing the formation of sinuses, by preventing the formation of matter; and were sinuses an inevitable consequence of all punctured wounds, for which no incisions had been practised at the moment of their occurrence, it would undoubtedly be unpardonable to omit them. Fair, however, as this reason may appear, it is only superficially plausible, and a small degree of reflection soon discovers its want of real solidity. Under what circumstances do sinuses form? Do they not form only where there is some causes existing to prevent the healing of an abscess? This cause may either be the indirect way in which the abscess communicates with the external opening, so that the pus cannot readily escape; or it may be the presence of some foreign body or carious bone; or, lastly, it may be an indisposition of the inner surface of the abscess to form granulations, arising from its long duration, but removable by laying the cyst completely open to the influence of the air. Thus it becomes manifest, that the occurrence of suppuration in punctured wounds is followed by sinuses only when the surgeon neglects to procure a free issue for the matter after its accumulation, or when he neglects to remove any extraneous bodies. But as dilating the wound at first can only tend to augment the inflammation and render the suppuration more extensive, it ought never to be practised in these cases, except for the direct object of giving free exit to matter already collected, and of being able to remove extraneous bodies palpably



lodged. It is an erroneous idea to suppose the narrowness of punctured wounds so principal a cause of the bad symptoms with which they are often attended, that the treatment ought invariably to aim at its removal.

Recent punctured wounds have absurdly had the same plan of treatment applied to them as old and callous fistulæ. Setons and stimulating injections, which, in the latter cases, sometimes act beneficially, by exciting such inflammation as is productive of the effusion of coagulating lymph, and of the granulating process, never prove serviceable when the indication is to moderate an inflammation which is too apt to rise to an improper height. The counter-opening that must be formed in adopting the use of a seton is also an objection. However, what good can possibly arise from a seton in these cases? Will it promote the discharge of foreign bodies, if any are present? By occupying the external openings of the wound, will it not be more likely to prevent it? In fact, will it not itself act with all the inconveniences and irritation of an extraneous substance in the world? Is it a likely means of diminishing the immoderate pain, swelling, and extensive suppuration so often attending punctured wounds? It will undoubtedly prevent the external openings from healing too soon; but cannot this object be effected in a better way? If the surgeon observe to insinuate a piece of lint into the sinus, and pass a probe through its tack once a day, the danger of its closing too soon will be removed.

The practice of enlarging punctured wounds by incisions, and of introducing setons, is often forbidden by the particular situation of these injuries.

In the first stage of a punctured wound, the indication is to guard against the attack of violent inflammation. In short, the antiphlogistic plan is to be followed. As no man can pronounce whether such a wound will unite or not, and as no harm can result from the attempt, the orifice ought to be closed, and covered with simple dressings.

Sometimes, under this treatment, the surgeon is agreeably surprised to find the consequent inflammation mild, and the wound speedily united by the first intention. "Numerous are the examples of wounds, which penetrate the large cavities, being healed by the first intention, that is, without any suppuration. Even wounds of the chest itself, with injury of the lungs (continues an experienced military surgeon and professor), ought to be united by the first intention." —(*Assilina, in Manuale di Chirurgia, parte seconda, p. 13.*) More frequently, however, in cases of deep stabs, the pain is intolerable; and the inflammatory symptoms run so high as to leave no hope of avoiding suppuration. In this condition, an emollient poultice is the best local application; and when the matter is formed, the treatment is like that of abscesses in general.

If the situation of the parts will admit of it, let the wound be daily immersed in hot ley; after which apply a poultice of it, (ley) by stirring in the *elm bark*, and applying it warm, and often renewing it. The sinus, or opening, should be often injected with soap and water, and other detergent liquids, such as the tincture of Blood-root, Gum,

Myrrh, &c. A tent, with a few grains of the *vegetable caustic*, may likewise be introduced to keep the wound open; when the swelling, pain, and inflammation have subsided, apply the black, or healing salve.

This treatment is peculiarly applicable to wounds occasioned by old or rusty nails, which are very dangerous, often giving rise to the lock-jaw.

### *Gun-shot Wounds.*

Gun-shot wounds, as before stated, are solutions of continuity effected by substances impelled from fire-arms. They are generally punctured as to their form, and always contused as to their surface. They are consequently apt to occasion extensive inflammation, and sloughing of the parts more immediately concerned. The orifice by which a ball enters is small, round, depressed, and livid; that by which it escapes larger, more elongated, and rather everted at its edges. These appearances vary with the velocity of the ball, the entrance being most, and the exit least distinctly characterized when it is greatest, and *vice versa*. The wound, when first received, occasions a numb sort of sensation, but before long becomes acutely painful. It bleeds less than an incised wound in the same situation would do. When of any considerable extent, it invariably causes, immediately on its infliction, an extreme degree of mental alarm, despondency and prostration of strength. This constitutional effect is proportioned to the importance of the injury, the weakness of the patient, and his apprehension of danger.

The bad consequences of gun-shot wounds were formerly ascribed to the poisonous agency of the gunpowder; and upon this belief was founded the cruel practice of scarifying or excising the wounded surfaces, and dressing them with sealding oils. Pare introduced a milder practice, which he was led to, in the first instance, by necessity, and was afterwards confirmed in by experience and reasoning on the subject. He used merely unctuous applications, and with such success, that his example was soon generally followed. The treatment of gun-shot wounds, though so far improved, still continued unnecessarily severe, since the scarification, which was formerly preferred to remove the poison, still remained in use, to prevent tension and inflammation from the fistulous shape of the wound. John Hunter exploded this system of dilatation, as it was called, by showing that it did not prevent the effects in question, and was performed soon enough if delayed until they actually appeared. The best application at first is a pledget of lint placed on the wound, a cooling wash, and a poultice. Should inflammation supervene, fomentations, and poultices, become proper; when the sloughs are detached, pressure with the usual cooling lotions, must be carefully employed, as there are apt to be extensive sinuses; and if these have not a sufficient opening, it ought to be afforded by tents, &c.

When the ball, or any other foreign matter introduced into the wound, is not carried through, but remains, it ought to be removed, if this can be done without any serious cutting or searching; for such extraneous substances often acquire a fibrous cyst, and cause no disagreeable symptoms. The finger is the best probe for detecting the

ball or other foreign body ; and when farther search is requisite to find it, the nature of the tissues concerned ought to be carefully considered, since the direction of its course is much affected by those of dense, and unyielding structure, as the bones, fasciæ, and even the skin. The velocity of the ball, and the position of the body when it entered, ought also to be taken into account. The forceps is the best instrument to extract it when it is practicable.

It is recommended to dilate all gun-shot wounds ; but this practice is attended with very little benefit, but on the contrary, with much mischief, except the ball is within reach, and can be felt, and it becomes necessary to remove it.

### *Poisoned Wounds.*

*Of the bites of rabid animals.*—After the expiration of a shorter or longer time, sometimes not until many months after the accident, the part becomes painful ; wandering pains are felt over the body ; great restlessness ; heaviness ; disturbed sleep, and frightful dreams ; sudden startings or spasms ; sighing ; anxiety, and love for solitude. These symptoms daily increase, pains begin to shoot from the wounded part up to the throat, occasioning a straightness and sensation of choking ; an aversion is felt to the swallowing of water or other liquids, which at length arises to such a degree, that the moment any thing in a fluid form is brought in contact with the patient's lip, it occasions him to start back with dread and horror ; and the attempt at deglutition is accompanied with a convulsive paroxysm. A vomiting of bilious matter is an early symptom ; an intense hot fever ensues, with dryness and roughness of the tongue, hoarseness of the voice, and the discharge of a viscid saliva from the mouth, which the patient is constantly spitting out ; together with spasms of the genital and urinary organs, in consequence of which the evacuations are forcibly ejected. There is extreme anxiety, and irritability sometimes so excessive, that the smallest impression made upon the body, by the perching of a fly or other cause, fails not to induce the most terrible convulsions. In some instances delirium arises, and closes the tragic scene ; but generally the judgment is retained until the pulse becomes tremulous and irregular, convulsions then arise, and nature is, at length, totally exhausted.

*Of the bite of the viper.*—Acute pain and considerable swelling of the part, which soon becomes red, and afterwards livid ; disposition to fainting ; or an actual syncope ; small rapid, sometimes interrupted, pulse ; great nausea ; bilious convulsive vomitings ; cold sweats ; the skin becomes yellow ; convulsions ; death.

*Of the bite of the rattle-snake.*—Nausea ; a full, strong, agitated pulse ; swelling of the whole body ; the eyes much diffused with blood ; sometimes copious bloody sweats ; and often hemorrhage from the eyes, nose, and ears. The teeth chatter, and the pains and groans of the sufferer indicate his approaching dissolution.

From some facts recorded by Sir Everard Home, and observations made on the operation of the poisons of the black-spotted snake of St. Lucia, the cobra di Capello, and the rattle-snake, it appears, that, "the effects of the bite of a snake vary according to the intensity of the poison. When the poison is very active, the local irritation is so sud-

den and so violent, and its effects on the general system are so great, that death soon takes place. When the body is afterwards inspected, the only alteration of structure met with is in the parts close to the bite, where the cellular membrane is completely destroyed, and the neighbouring muscles very considerably inflamed. When the poison is less intense, the shock to the general system does not prove fatal: It brings on a slight degree of delirium, and the pain in the part bitten is very severe; in about half an hour, swelling takes place from an effusion of serum in the cellular membrane, which continues to increase, with greater or less rapidity, for about twelve hours, extending during that period into the neighbourhood of the bite. The blood ceases to flow in the small vessels of the swollen parts; the skin over them becomes quite cold; the action of the heart is so weak that the pulse is scarcely perceptible, and the stomach is so irritable that nothing is retained by it. In about sixty hours, these symptoms go off; inflammation and suppuration takes place in the injured parts; and when the abscess formed is very great, it proves fatal. When the bite has been in the finger, that part has immediately mortified. When death has taken place under such circumstances, the absorbent vessels and their glands have undergone no change similar to the effects of morbid poisons, nor has any part lost its natural appearance, except those immediately connected with the abscess. In those patients who recover with difficulty from the bite, the symptoms produced by it go off more readily and more completely than those produced by a morbid poison, which has been received into the system.—(*Sir E. Home, Case of a Man who died in consequence of the bite of a rattle-snake, in Phil. Trans., 1810.*)

*The bite of the adder* is attended with symptoms of a similar nature but they are much less violent; neither does it often prove fatal.

*Of smaller reptiles, and of insects.*—These in general produce local inflammation only; which, however, is often very severe: in some instances the bite is productive of the same consequences as punctured wounds; inducing inflammation of the absorbents, and convulsions from their effect upon the nerves.

The effects of the bite of musquitos, are small tumors, attended with so high a degree of itching and inflammation, that the patient cannot refrain from scratching; by a frequent repetition of which he not uncommonly occasions them to ulcerate.

*The Chigre* is a kind of small sand-flea, which proves very troublesome in the West Indies, by insinuating itself into the soft and tender parts of the fingers and toes more usually than into other parts of the body, particularly under the nails, where it continues to increase in size, causing no farther pain than a disagreeable itching and heat. In process of time, however, a small bag or bladder is formed, in which are deposited thousands of nits or ova, that become so many young chigres, and if not speedily extracted, create running ulcers. Some people have lost their limbs by amputation, nay, even their lives, by having neglected to root out these vermin in proper time.

The moment, therefore, that an itching, redness, and heat, more than usual, are perceived in any part affected with a chigre, it will be advisable to extract it. This is usually done with a sharp-pointed



needle by some dexterous negro, who picks out the insect, and if a cyst is formed, endeavours to take out this whole also; for by breaking it, troublesome ulcers are sometimes formed. The cavity is then usually filled up with tobacco-ashes or snuff.

In very inveterate cases, where from neglect either the hands or feet are much beset with chigres, it may be necessary, after the extraction of the several cysts, to wash the parts with a strong decoction of tobacco, or a solution of the vegetable caustic.

#### TREATMENT OF POISONED WOUNDS.

- Indications, }
  1. To prevent the absorption of the poison.
  2. To counteract its destructive effects when already introduced into the system.

1st. As soon as a person has been bitten by any kind of a snake which is poisonous, as a rattle snake or adder, a cup should be applied to the part as soon as possible, and, after it has drawn awhile, use the scarificators, and apply the cups again, and thus drawing out as much fluid as can be done.

The efficacy of cupping in poisoned wounds has been well tested, in experiments made upon animals which had been bitten; it was proved that those to which the cups were applied experienced no bad effects of the poison, while the others soon died. This operation prevents the absorption of the virus, or poison.

2nd. As soon as the wound has been cupped, apply the vegetable caustic, and let it be repeated twice a day.

3rd. Make a strong decoction of the *common plantain*, and wash the wound with it: after which mix it with the *slippery elm bark*, add freely of *sweet oil*, and apply it constantly, or as long as there is any swelling or inflammation.

This has proved very effectual in poisoned wounds. The plantain has been found a certain antidote against the bites of different animals.

I have read an account of a battle fought between a toad and a snake, in which the former, whenever he was bitten, repaired immediately to a little distance and ate the leaves of the plantain, after which he returned and renewed the conflict. The person who witnessed the scene, after a short time, plucked up the root, and when the animal was deprived of it he immediately died, thus demonstrating the power of the plant. This production forms the basis of a receipt for the cure of poisoned wounds, which was long and successfully used by a negro named Cæsar, residing in one of the Southern states; and his master gave him his liberty, on conditions of publishing it. It may be drank internally, and applied externally.

4th. An ounce of Olive oil must be taken by the patient every day, and the cupping repeated.

It is now customary to cut out the part wounded; but this is cruel and unnecessary.

A singular case of poisoned wound, from the bite of a rattle-snake, occurred some years since, under the observation of Dr. S. T. Barstow, of Wilkesbarre, Pennsylvania, and in some respects is perfectly anomalous.

A lady, in the fourth or fifth month of her pregnancy, was bitten by a rattle-snake, but under the treatment she at length recovered from the symptoms usually consequent upon such wounds. At the full period of gestation, she was safely delivered of a fine, healthy-looking child; but immediately on its being applied to the breast and allowing it to suck, the child assumed the peculiar hues of the rattle-snake, swelled exceedingly, and soon died. She then procured a puppy to relieve her breast, which died in two days of the same symptoms. A lamb was then tried; and in succession, one puppy and three lambs shared the same fate. Another puppy was then procured, which escaped with its life, but exhibited some of the symptoms which had been fatal to its predecessors. The lady remained all this time without any symptom of the disease, and had as rapid a convalescence from parturition as is usually observed.

The poison seems to have been excreted by the process of lactation; for the second year afterward she had another child, and though she applied it to her breasts, not without fearful forebodings, yet no evil consequences resulted.

The obscurity in which the action of poisons on the human constitution is involved, is in nowise lessened when we consider that testimony of the most satisfactory sort shows that hydrophobia may be generated by *heat*, and that the disease may sometimes occur spontaneously. According to M. Unaniel, in 1807, in the village of Sea, forty-two persons died, after having been bitten by mad dogs; and on the north coast, hydrophobia occurred in several individuals without bite.—(See *Journal des Progres*, quoted in *North Am. Med. and Surg. Journ.* vol. 6.) The causes which may induce spontaneous hydrophobia are violent emotions of the mind, sorrow, fear, rage, fright, the want of food, &c. Drs. Hosack and Francis enjoyed a singular opportunity of witnessing a case of hydrophobia, arising in a young man, aged thirteen years, independent of the bite of a rabid animal. He had been severely treated by his guardian or overseer for some imaginary offence; the want of food and clothing at an inclement season of the year could alone be looked upon as the exciting cause of his complaint. The symptoms of his disorder throughout were similar to those arising from madness induced by the bite of a rabid animal.—(*N. Y. Med. and Phys. Journal*, vol. 2.) A curious paper on the various means employed for the cure of hydrophobia by Dr. Mease, may be seen in the Philadelphia Medical Museum.

## WOUNDS OCCURRING IN PARTICULAR PARTS OF THE BODY.

*Wounds of the throat.*—Superficial wounds of the throat require the same treatment as others, but they are often very deep from attempts to commit suicide. In this case, the first thing that demands attention is the hemorrhage which is often profuse: the bleeding vessels in this case, if possible, should be secured by a ligature; although I have seen a copious hemorrhage spontaneously cease without tying it, and without compression. When the carotid artery is cut, it is generally fatal, but not always when the jugulars are divided. After the bleeding has ceased or has been stopped, the divided parts must be brought together and secured the same as other wounds. It is customary with some to use stitches or sutures, but they excite irritation, or inflammation, and when the patient coughs, or upon any motion of these parts, the stitches are torn through. Sometimes the trachea, or wind-pipe, and œsophagus are cut through. When this accident occurs, the most that is necessary to be done, is the same treatment as before recommended, or application of the ordinary dressings.

*Wounds penetrating cavities.*—The thorax and abdomen are sometimes penetrated, and dangerous consequences result if any of the viscera contained in these cavities are injured.

*Wounds of the Thorax.*—The thorax is sometimes penetrated sufficient to penetrate the cavity of the pleura, and the admission of air, produces an immediate collapse of the lungs, and respiration is performed with great difficulty. When this accident occurs, the wound must be closed, a plaster and bandage applied over it, and rest and a cooling regimen enjoined.

Should inflammation arise, the parts must be poulticed, and it must be placed between two pieces of muslin to prevent any portion of it from entering the cavity of the chest.

*Wounds penetrating the Abdomen.*—Wounds occurring in these parts are often very dangerous, arising from the danger of peritoneal inflammation. If the wound is superficial, let it be dressed the same as others, and the treatment both external and internal instituted, as it is calculated to prevent inflammation. If the wound penetrate the cavity of the abdomen, and let out the intestines, after removing the extraneous substances, they must be returned, parts brought together, and secured, and cooling lotions, and poultices applied. Tepid applications are, in general preferable, as those that are cool are apt to produce a chill, and subsequently fever. In general, in all cases of wounds of the abdomen, it is an excellent rule never to be officious about abscesses which may take place, nor to exhibit partiality to such experiments as have been devised for learning precisely what bowel is wounded. It is quite time enough to interfere when the urgency of the symptoms confirms any suspicions which may be entertained. A great deal of harm is frequently done by handling and disturbing the wounded parts more than is necessary, and it is well known, that wounds at first attended with alarming symptoms frequently have a favourable termination. Swords, balls, and other weapons sometimes pass completely through the body without the patient suffering afterwards any threatening symptom, or indeed any effect which,

abstractly considered, would authorize the inference that the viscera had been at all injured. Severe inflammations may not end in suppuration, and when pus is formed it is sometimes absorbed again. Nothing, then, indicates the necessity for the discharge of purulent matter in the abdomen, unless the fluctuation and situation of the abscess be very distinct, and the quantity and pressure of the matter clearly productive of inconveniences. Under these circumstances, the surgeon should make a cautious puncture with a lancet.

I lately saw a case in which a very aged female had a considerable portion of the abdomen torn open, the intestines thrown externally, by the horn of a cow.

By judicious treatment, although there was inflammation of the peritoneum and the most extensive suppuration, when I last heard from her she was nearly, or quite well. In such cases there is much constitutional disturbance, which must be removed by a strict anti-phlogistic, or cooling course of treatment.

### *Wounds of the Intestines.*

Sometimes the intestines are wounded, or partially divided. When this happens, we must rely more upon the recourses of nature than art. Adhesive inflammation may arise, and agglutinate, the divided intestine together. The vomiting of blood, or discharge of it by stool; the escape of fetid air or of intestinal matter from the mouth of the wound; an empty, collapsed state of a portion of bowel, protruded at the opening in the skin, are the common symptoms attending a wound of this kind. When the wound is situated in the protruded portion, it is obvious to the surgeon's eye; but when it affects a part of the intestinal canal within the abdomen, the nature of the case can be known only by a consideration of other symptoms. In addition to such as I have already described, there are some others which ordinarily accompany wounds of the bowels; as, for instance, oppression about the precordia, acute or griping pain in the belly, cold sweats, syncope, &c. But unless the wounded intestine protrude, there is no practical good in knowing whether the bowel is injured or not; since if it be in the abdomen, the treatment ought not to be materially different from that of a simple penetrating wound of the belly, unattended with a wound of any of the viscera. Large wounds of the small intestines, particularly of the duodenum and jejunum, are attended with acute fever, anxiety, paleness of the countenance, syncope, cold perspirations, a small, intermitting, tremulous pulse, and they frequently prove fatal. Injuries of the small intestines are also more often than those of the large ones followed by extravasation. A total division of the upper part of the intestinal canal, towards the pylorus, will deprive the body of the nourishment requisite for its support. If the chyle escape from the wound, the patient will die of a slow marasmus; and if it become extravasated, it will be likely to excite such irritation as will prove fatal. The escape of excrement or of fetid air from the wound, indicates an injury of one of the large intestines. In these cases, the symptoms are generally milder, and the passage of the intestinal contents outwards, through the



wound, more easy, on account of the bowel being less moveable. For the same reason, the wounded intestine more readily contracts an adhesion to the adjacent parts.—(*Callisen, Syst. Chirurgiæ Hodiernæ, t. 1, p. 717.*)

From repeated experience, we learn that most of the viscera of the abdomen may be wounded without any very serious or fatal consequences, and this affords wonderful proof of the resources and powers of nature, in providing against danger and death.

When the wounded bowel lies within the cavity of the abdomen, no surgeon of the present day would have the rashness to think of attempting to expose the injured intestine, for the purpose of sewing up the breach of continuity in it. In fact, the surgeon seldom knows at first what has happened; and when the nature of the case is afterwards manifested, by the discharge of blood per anum, and extravasation of intestinal matter, &c., it would be impossible to get at the injured part of the bowel, not only because its exact situation is unknown, but more particularly on account of the adhesions, which are always formed with surprising rapidity. But even if the surgeon knew to a certainty, in the first instance, that one of the bowels was wounded, and the precise situation of the injury, no suture could be applied without considerably enlarging the external wound, drawing the wounded intestine out of the cavity of the abdomen, and handling and disturbing the adjacent viscera. Nothing would be more likely than such proceedings to render the accident, which might originally be curable, unavoidably fatal. I entirely agree with Mr. John Bell, who says, "When there is a wounded intestine, which we are warned of only by the passing out of the feces, we must not pretend to search for it, nor put in our finger, nor expect to sew it to the wound; but we may trust that the universal pressure, which prevents great effusion of blood, and collects the blood into one place, that very pressure which always causes the wounded bowel and no other to protrude, will make the two wounds, the outward wound and the inward wound, of the intestine, oppose each other, point to point; and if all be kept there quiet, though but for one day, so lively is the tendency to inflame, that the adhesion will be begun which is to save the patient's life."—(*Discourses on Wounds, p. 361, edit. 3.*)

When the extravasation and other symptoms, a few days after the accident, show the nature of the case, a suture can be of no use whatever, as the adhesive inflammation has already fixed the part in its situation, and the space in which the extravasation lies is completely separated from the general cavity of the abdomen, by the surrounding adhesions.

When the bowel does not protrude, and the opening in it is situated closely behind the wound in the peritoneum, a suture is not requisite; for the contents of the gut, not passing onward, will be discharged from the outer wound, and not be diffused among the viscera, if care be taken to keep the external wound open. There is no danger of the wounded bowel changing its situation, and becoming distant from the wound in the peritoneum, for the situation which it now occupies is its natural one. Nothing but violent motion or exertions could cause so unfavourable an occurrence, and these should always be avoided. The adhesions which take place in the course of a day

or two at length render it impossible for the bowel to shift its situation. Things, however, are very far different when the wounded part of the bowel happens to protrude. No enlargement of the outer wound is requisite to enable the practitioner to adopt the suture; there is no disturbance of the adjacent parts; there is no doubt concerning the actual existence of the injury; no difficulty in immediately finding out its situation.

But though authors are so generally agreed about the propriety of using a suture in the case of a wounded and protruded bowel, they differ exceedingly, both as to the right object of the method, and the most advantageous mode of sewing the injured part of the intestine. Some have little apprehension of extravasation, advise only one stitch to be made, and use the ligature chiefly with the view of confining the injured bowel near the external wound, so that in the event of an extravasation, the effused matter may find its way outwards. Other writers wish to remove the possibility of extravasation, by applying numerous stitches, and attach little importance to the plan of using the ligature, principally for the purpose of keeping the intestine near the superficial wound.

When the wound of a bowel is so small that it is closed by the protrusion of the villous coat, the application of a suture must evidently be altogether needless; and since the ligature would not fail to cause irritation, as an extraneous substance, the employment of it ought unquestionably to be dispensed with.

Notwithstanding I have carefully read all the arguments adduced by Travers, in favour of stitching a divided bowel at as many points as possible, I still remain unconvinced of the advantage of such practice, for reasons already suggested. If a case were to present itself to me, in which a bowel, partly cut through, protruded, I should apply only a single suture, made with a small sewing-needle and a piece of fine silk. If the bowel were completely cut across, I should have no objection to attach its ends together by means of two or three stitches of the same kind. I coincide with Mr. Travers, respecting the advantage of cutting off the ends of the ligature, instead of leaving them in the wound, as I believe he is right in regard to the little chance there is of the injured intestine receding far from the wound; and if the ends of the ligature are then of no use in keeping the bowel in this position, they must be objectionable as extraneous substances. [*Cooper.*]

As confirming some of the foregoing observations, I would refer to the valuable writings of Scarpa and those of Dr. Hennen.

"The old practitioners (says Dr. Hennen,) were very much averse from leaving any thing to nature in cases of abdominal injuries, although their universal employment of sutures ought to have convinced them how much she could bear with impunity; for there can be very little doubt that their uniform performance of the operation of gastroraphe was at least superfluous, if not positively hurtful. In the course of a very extensive practice, two cases only have come under my notice, where it was required to a wounded intestine, though frequently it may be needed for injuries to the parietes."—(*On Military Surgery*, ed. 2, p. 411.)

As Dr. Hennon observes, in the treatment of wounds of the abdomen, the violence of symptoms is to be combated more by general means than by any of the mechanical aids of surgery. The search for extraneous bodies, unless superficially situated, or they can be felt with a probe, is entirely out of the question. "Enlargement or contraction of the wound, as the case may require, for returning protruded intestine, securing the intestine itself, and promoting the adhesion of the parts, is all that the surgeon must do in the way of operation; and even in this the less he interferes the better."—(*On Military Surgery*, ed. 2, p. 401.)

The principal indication is to prevent a dangerous degree of inflammation. Hence the antiphlogistic treatment is highly indispensable.

Wounds of the small intestines are attended with more dangerous symptoms than those of the large ones. All flatulent, stimulating, and solid food is to be prohibited. The bowels are to be daily emptied with clysters, by which means no matter will be suffered to accumulate in the intestinal canal, so as to create irritation and distension.

When excrementitious matter is discharged from the outer wound, it is highly necessary to clean and dress the part very frequently. Gentle pressure should also be made with the fingers, at the circumference of the wound, at each time of applying the dressings, for the purpose of promoting the escape of any extravasated matter. For the same reason the patient should always lie, if convenient, in a posture that will render the external opening depending.

After a day or two, the surgeon need not be afraid of letting the outer wound heal up; for the adhesive inflammation all around the course of the wound will now prevent any extravasated matter from becoming diffused among the viscera. If the case should end well, the intestine generally undergoes a diminution in its diameter at the place where the wound was situated. When this contraction is considerable, the patient occasionally experiences colic pains at the part, especially after eating such food as tends to produce flatulence. As these pains usually go entirely off after a certain time, and no inconvenience whatsoever remains, the intestine may possibly regain its wonted capacity again. A more considerable constriction of the above sort has been known to occasion a fatal misere. Even the intestine itself has been known to burst in this situation, after its contents had accumulated behind the contracted part. Patients, who have recovered from wounds in the intestines, should ever afterward be particularly careful not to swallow any hard substances, or indigestible flatulent food.

*Wounds of the Joints.*—In all wounds of the joints, it is proper to place the limb in such a posture as to favor the approximation of the sides of the wound, and absolute rest must be enjoined. In every other respect they must be treated as other wounds. When there is a discharge of synovia, or joint water, it may sometimes be necessary to sprinkle styptic powders upon the wound, to prevent its escape; but as the wound heals, the discharge usually lessens.

I attended one case where the knee was wounded with a scythe, and where there was a discharge both of pus and of the synovial fluid. The application of the elm poultice, and black plaster, reduced

the swelling and inflammation; the wound rapidly healed, and he soon recovered.

*Wounds of the Tendons.*—It requires sometimes nice discrimination to detect wounds of the tendons, as they are usually complicated with ulcers. There is a discharge from the sore, of matter or pus, and also of a clear fluid resembling joint water. In such cases, instead of exciting a preternatural discharge, as we do in common ulcers, we must reverse our treatment, and make use of such applications as will check this discharge.

I attended a young man, nearly fifteen years ago, who received a wound of the leg by a cart passing over it, and which was attended by a physician, or surgeon, of New Brunswick, who stated that it would be a year or two before he could recover, and that a portion of bone must first be sawed off. He was brought to me, a distance of thirty miles, exhibiting, when he arrived, very unfavorable symptoms. He had become very pale and much reduced. Upon an examination of his sore, which was upon the leg, it appeared to assume the appearance or character of a common ulcer, and for such I prescribed. I applied medicine to make it discharge more freely, with a view to bring about a healthy action; but this discharge was attended with a very serious effect; it reduced him in twelve hours surprisingly, and I could not account for it; but upon a more minute examination, I discovered two kinds of matter or fluids issuing from the ulcer; one kind was pus, the other was such as issues from a common ganglion, from which I perceived that my treatment was diametrically the reverse from what it ought to have been. I therefore reversed it, and injected in with a small syringe, an astringent preparation, made by adding a few grains of the styptic powder to a strong decoction of the Persimon bark, which immediately checked the discharge and so changed the character of the ulcer, that the patient was soon able to walk, and he entirely recovered, to the great disappointment and mortification of his former physician.

When he first came he was unable to walk, I think, even with crutches.

Such is the proper treatment of various kinds of wounds, and no matter in what part of the body they are received, the practitioner in treating them is to be governed by the same principles with such variations, as particular and peculiar cases may require.

In wounds of the integuments of the head, the hair must be carefully shaved off with a razor, extraneous substances removed, the divided parts replaced in contact, and secured either by the *improved adhesive or uniting plaster*, or narrow strips of the same. No matter how extensive the wound is, the separate scalp or integuments must be replaced. In cases where nearly half the scalp has been torn off, and covered with dirt and splinters of wood, the parts have been cleansed and replaced, and the wound has healed.



## CHAPTER IV.

### INJURIES OF THE HEAD.

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**ALL** injuries of the head are more dangerous than any other kind, in consequence of the effect they produce upon the brain and nervous system.

From the variety of parts of which the scalp is composed, from their structure, connexions, and uses, injuries done to it by external violence become of much more consequence than the same kind of ills can prove, when inflicted on the common integuments of the rest of the body. One principal reason of the danger in these cases depends upon the free communication between the vessels of the pericranium and those of the dura mater, through the diploe of the skull; for when inflammation is kindled in the former membrane, it may extend itself to the latter. According to Sir Astley Cooper, there are three modes in which wounds of the scalp may induce fatal consequences. 1st, by producing what is called an erysipelatous inflammation on the head; 2dly, by producing extensive suppuration under the tendon of the occipito-frontalis muscle; 3dly, by rendering a simple fracture compound by means of the trephine, so as to cause more extensive inflammation of the dura mater.

The nervous system is composed of the cerebrum, cerebellum, and medulla oblongata, which principally supply the organs of sense and their appendages with nerves, and of the medulla spinalis, with the nerves of volition and sensation proceeding from it. But there is a second system of nerves in the body, called the grand sympathetic, which is distributed to the heart, and to the viscera of the abdomen: it communicates with most of the nerves of the brain, and with those of the spinal marrow: it forms by its branches a large ganglion, or several ganglia, called the semilunar, situated behind the stomach; and a plexus proceeds from this, which distributes branches to the greater part of the abdominal viscera.

The eighth pair of nerves of the brain forms a large communication with the ganglion behind the stomach.

If an injury happens to the head, the functions of volition and sensation are diminished; the stomach is disordered through the medium of the par vagum; and from the general communication between the grand sympathetic nerve, and those of the brain and spinal marrow, the functions of the heart and of the abdominal viscera become affected. The powers of the mind are also diminished; the memory is lost; the judgment is enfeebled: thus sensation, volition, the involuntary actions, and the powers of the mind, are diminished or suspended.

The time at which inflammation of the brain supervenes, after the injury has been received, is generally about a week, rarely less than

that time ; and this it was that led me to say, on another occasion, that inflammation of the brain was more slow in its occurrence than that of most other organs. It often happens that inflammation of the brain does not come on till a fortnight or even three weeks after the injury. Every surgeon who has written on the subject puts his reader on his guard about the distance of time that complaint supervenes after the accident he tells you the patient is not safe till two or three weeks afterwards. If you read the works of Mr. Pott on the injuries of the head, you will find the circumstance mentioned ; and in the work of Mr. Dease, of Dublin, it is distinctly stated, that inflammation of the brain is occasionally postponed to three or four weeks after the accident occurs, and even then the patient is not safe. [Cooper.]

“A blow on the scalp,” says Dorsey, “occasions an *ecchymosis*, in which blood forming the tumour remains fluid, and the surrounding scalp feels unusually hard and elevated, and conveys to the fingers a sensation resembling that of depressed bone. Mr. Pott describes this accident particularly, with a view to caution young practitioners against opening the tumour under an expectation of finding depressed bone. The proper treatment consists in promoting the absorption of the extravasated blood by cold applications, and if these are unsuccessful, a small puncture may be made with a sharp lancet and the fluid pressed out. If suppuration take place, the abscess must be treated in the usual manner. It is prudent in all injuries of the scalp to enjoin a low diet, and prescribe a purge.”

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#### SECTION I.

#### *Wounds of the Scalp or Integuments.*

*Dangerous.*—Wounds of the scalp are not devoid of danger ; and slight injuries of that part have destroyed life. Incised wounds are certainly less liable to produce deleterious effects than the lacerated or contused ; although I knew a lady, of high consequence in the country, die from the removal of an encysted tumour in the scalp.

*Cause of danger.*—The cause of the danger attending such wounds is the free communication by blood-vessels between the scalp and dura matter ; as the vessels of the pericranium freely anastomose with those of the dura mater through the diploe of the skull, and, therefore, inflammation lighted up in the one, is readily extending its influence to the other. There cannot be, therefore, a more absurd and injudicious practice than that of wantonly making incisions through the scalp, to ascertain the exact extent of the injury which the bone may have received, when there are no symptoms to justify such a procedure ; because such incisions produce new dangers to the patient, as well as add to that which the injury would itself produce. If, therefore, I am called to a case of injury of the head, in which there is apparent depression of the skull, yet there are no symptoms of injury of the brain, I would not render that fracture compound by making an incision through the scalp ; and even if

there were symptoms of injury of the brain, I would try the effect of free depletion, before I made an incision, as the loss of blood sometimes occasions the entire removal of the symptoms. But if there were already a wound in the scalp, and my finger passed down to a depressed portion of bone, I would immediately use an elevator to raise it, which may be generally done in children without difficulty, and in the adult would saw off a portion of bone to admit the elevator. [Cooper.]

Wounds in the soft parts of the head must be treated the same as other kinds of wounds. (See Chapter on this subject.) The hair should be shaved off with a razor a considerable distance round the wound, after which the blood may be removed with a sponge or piece of linen, and all foreign substances; the divided edges brought in contact, and secured by means of the *improved* or *uniting plaster*, or narrow slips of the same. Over these dressings a plaster of the *black* or *healing salve* may be applied; and it is necessary, previously, to apply a little lint to the wound. The dressings may be secured by a bandage or night-cap.

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## SECTION II.

### *Concussion of the Brain.*

Mr. Abernethy has removed a good deal of the perplexity of this subject, by dividing concussion into three stages. In fact, without discriminating them, the various descriptions of the symptoms, as given by different writers, cannot be at all reconciled.

"The *first* is, that state of insensibility and derangement of bodily powers which immediately succeeds the accident. While it lasts, the patient scarcely feels any injury that may be inflicted on him. His breathing is difficult, but in general without stertor; his pulse intermits, and his extremities are cold. But such a state cannot last long; it goes off gradually, and is succeeded by another, which I consider as the *second* stage of concussion. In this, the pulse and respiration become better, and though not regularly performed, are sufficient to maintain life, and to diffuse warmth over the extreme parts of the body. The feeling of the patient is now so far restored, that he is sensible if his skin be pinched; but he lies stupid and inattentive to slight external impressions. As the effects of concussion diminish, he becomes capable of replying to questions put to him in a loud tone of voice, especially when they refer to his chief suffering at the time, as pain in the head, &c.; otherwise he answers incoherently, and as if his attention was occupied by something else. As long as the stupor remains, the inflammation of the brain seems to be moderate; but as the former abates, the latter seldom fails to increase; and this constitutes the *third* stage, which is the most important of the series of effects proceeding from concussion.

These several stages vary considerably in their degree and duration; but more or less of each will be found to take place in every instance where the brain has been violently shaken. Whether they bear any certain proportion to each other or not, I do not know. In-

deed, this will depend upon such a variety of circumstances in the constitution, the injury, and the after-treatment, that it must be difficult to determine.

In most cases of concussion, the patient vomits after the accident. According to Mr. Brodie, sickness and vomiting are generally early symptoms, and seldom continue after the patient has recovered from the first shock of the accident.—(*Med. Chir. Trans.* vol. xiv. p. 339.) In the beginning, a torpor exists in the intestinal canal, and considerable difficulty in procuring an evacuation; but afterward the feces are sometimes involuntarily discharged, and the bladder becomes distended, so as to require the catheter; but after a time, the urine also comes away involuntarily. There is sometimes bleeding at the nose, and a part of the blood which drops in the throat is vomited up. The pupils of the eyes are generally natural; but if changed, both are a little dilated, or sometimes only one. The state of the pupils, however, is differently represented by different writers, and my experience has taught me that it is subject to much variety. In that stage in which the sensibility of the patient is impaired, but not annihilated, “the pupils contract on exposure to light, and are sometimes more contracted than under ordinary circumstances.”—(*Brodie*, vol. cit. p. 338.) According to Sir Astley Cooper, the pulse, although natural when the patient is undisturbed, scarcely ever fails to be quickened by any exertion made by the patient: and the carotids sometimes pulsate with great force; but the latter symptom is generally not noticed till after a few hours. The state of the pulse is very different, according to the stage of the disorder. In severe cases, the pulse is at first intermitting, irregular, feeble, perhaps scarcely perceptible, and the patient in a condition approaching that of syncope. Such may be his situation for several hours after the accident. When concussion proves fatal, the cause of death is imputed by Mr. Brodie to this disturbance of the action of the heart. “In general, when the patient has lain for some time in the state which has been described, a reaction of the circulating system takes place, and the pulse beats with greater strength in proportion as the failure of it was greater in the first instance. But where the shock has been unusually severe, there is no such reaction. The pulse becomes more and more feeble, more irregular and intermittent; the extremities grow cold, and at last, the action of the heart being altogether suspended, the patient expires. In some cases, even after reaction has begun to take place, it seems as if the constitution were unequal to the effort: there is another failure of the circulation, the result of which is the same as if the patient had never rallied from the beginning.”—(*Brodie*, in *Med. Chir. Trans.* vol. xiv. p. 341.) The mind, as Sir Astley Cooper remarks, is variously affected, according to the degree of injury which the patient has sustained. In some cases, there is a total loss of mental power; in others, the patient is capable, though with difficulty, of being roused to make a rational answer, but immediately sinks again into coma. Sometimes the memory is lost; while in other instances, it is only partially impaired. A total forgetfulness of any foreign language is a common effect of concussion. It frequently happens that the patient, when roused, will be perfectly sensible, and answer questions



rationality; but if left undisturbed, the mind appears to be occupied by some particular circumstance, (often an incoherent one,) of which he is constantly talking. Patients recollect nothing about the mode in which their accidents took place. If the injury has been occasioned by a fall from a horse, they can only remember mounting and riding to some distance, but not that the animal ran away or threw them; nor, however perfectly they may recover in other respects, do they ever have any recollection of the kind of accident. The change produced by injuries of the brain is remarked to be somewhat similar to the effects of age; the patient loses impressions of a recent date, and is sensible of those which he received in his earlier years. But, as Sir Astley correctly explains, the degree of injury sustained by the brain varies considerably in different cases. Some patients are only stunned, or deprived of sense for a moment; others recover in a few hours; some remain in a great degree insensible for fifteen or twenty days. Some recover entirely; others have afterward an imperfect memory. A partial loss of sense will be produced in the function of one eye, or deafness in one ear; and so of volition, the squinting caused by an injury of the brain being sometimes permanent. In some cases a degree of fatuity; in some, great irritability; in others, vertigo, and tendency to severe headache from the slightest excitement, will remain. In one example seen by Sir Astley Cooper, a remarkable irritability of the stomach and disposition to vomit were the permanent consequences of a concussion of the brain. In particular instances, the faculty of readily uttering the proper words for expressing ideas is lost and never regained, and wrong terms are used. Often the judgment remains enfeebled.—(*Lectures*, vol. i. p. 254, &c.) Many of the observations in the foregoing statement coincide with the accounts given of the subject in the writings of Bichat and Desault.

The following passage, extracted from a writer who has already been of material assistance in this article, cannot be too deeply impressed on the memory of every practitioner.

“To distinguish between an extravasation and commotion by the symptoms only, is frequently a very difficult matter, sometimes an impossible one. The similarity of the effects in some cases, and the very small space of time which may intervene between the going off of the one, and the accession of the other, render this a very nice exercise of the judgment. The first stunning or deprivation of sense, whether total or partial, may be from either, and no man can tell from which; but when these first symptoms have been removed, or have spontaneously disappeared, if such patient is again oppressed with drowsiness or stupidity, or a total or a partial loss of sense, it then becomes most probable, that the first complaints were from commotion, and that the latter are from extravasation; and the greater the distance of time between the two, the greater is the probability, not only that an extravasation is the cause, but that the extravasation is of the limpid kind, made gradatim, and within the brain.”

The causes of the symptoms of injury to the brain are two: 1st. Concussion; 2d. Pressure, which may be the result of extravasa-

tion of blood, of depression of bone, or of matter produced by inflammation on the brain.

Cooper thus remarks on *Symptoms of Concussion*.—When you approach the bedside of the patient who has a concussion of the brain, you find him in what you would suppose a sweetly tranquil sleep : his breathing is easy, and not quicker or slower than natural : his pulse is beating with steadiness, and with its usual velocity, and you would be disposed to say, do not disturb him, but let him sleep on. But if you attempt to rouse him, he is with difficulty excited ; if he be spoken to, he mutters, and returns an incoherent answer, and you then discover that he is comatose. Upon inquiry it is found, that he has received a severe blow upon his head, that immediately after he was senseless, and unable to stand, and that he had since vomited. At first a torpor exists in the intestinal canal, and considerable difficulty in procuring an evacuation, but afterwards the fæces are involuntarily discharged : in a few hours the bladder is distended, from the accumulation of urine, which demands the introduction of a catheter for its removal ; but after some time the urine also passes involuntarily.

There is sometimes, in these cases, bleeding at the nose, and from the blood trickling into the throat and stomach, blood is vomited ; the pupils of the eyes are generally natural ; but if changed, both are a little dilated, or sometimes one only. The state of the pulse is curious. Although when the patient is undisturbed it is natural, it scarcely ever fails to be quickened, if the patient is capable of making any effort to rise, and exerts himself for that purpose. The carotid arteries sometimes beat, under an exertion, with a force disproportioned to the other arteries of the body ; but generally this symptom is not observed until after a few hours.

*Mind*.—The mind is variously affected, according to the degree of injury which the patient has sustained. In some cases there is a total loss of mental power ; in others, the patient is capable, though with difficulty, of being roused to make a rational answer, but again sinks immediately into coma. Sometimes the memory is lost, at others only partially impaired.

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### SECTION III.

#### *Compression of the Brain.*

Compression of the brain may be produced by blood extravasated within the cranium, or by a portion of the skull being beat in below its natural level.

1st. *Compression from Effused Blood*.—Blood may be extravasated between the skull and dura mater : beneath the pia mater ; into the ventricles ; or into the substance of the brain. The symptoms in all these cases are similar. It has always been an object of interest, among surgeons, to designate the symptoms which attend compression of the brain, and to discriminate them from those arising from concussion ; and although no subject has been more carefully investigated than this, yet amidst the multiplicity of observations which

are to be found in surgical writings, no accurately distinctive symptoms have ever been pointed out; and this furnishes an argument in favour of the opinion, that in concussion there is extravasation. Le Dran, long ago observed, that "in concussion small vessels may be ruptured, and thereby occasion extravasation in several places." The loss of sense, speech and voluntary motion, which attend severe concussion, is alike common after extravasations of blood, and depression of the blood. Mr. Abernethy observes, on this subject, that "if we judge of the symptoms of compression from what occurs in cases of apoplexy, or from cases of the rupture of the middle artery of the dura mater, we must be of opinion that pressure on the brain occasions insensibility partially, or generally, and in a degree proportionate to its quantity." "In extreme cases, the insensibility is manifested by every circumstance. *The pupil of the eye is dilated, and cannot be made to contract, even by a strong light. The respiration is slow and stertorous, and the pulse proportionally slow and labouring. There is no vomiting which would indicate sensibility of stomach. The limbs are relaxed, as in a person just dead. No struggles take place; no signs of sensation appear during the operation; but on the pressure being removed, sensation and intelligence are immediately restored. In concussion, the insensible state is of short duration, and during its continuance the body is generally cold, and the pulse feeble and intermitting. Afterwards the skin is hotter than usual; the pulse and respiration more frequent; the former often intermits, and the latter has not the stertor of apoplexy. (But the absence of stertor must not be relied on as a proof that there is no compression, for Morgagni relates dissections of apoplectic persons, where the effusion was considerable, yet no stertor had occurred; and in some cases where it took place only in a very slight degree.) The pupil of the eye is not dilated, but rather contracted. The countenance expresses pain and uneasiness, and vomiting occasionally takes place. The state of the patient is like that of a heavy and uncomfortable sleep; yet, being roused, signs even of intelligence appear.*"

These remarks of Mr. Abernethy contain the best contrast of the symptoms resulting from concussion and compression which are to be found; but in some cases they are insufficient to afford an accurate diagnosis.

In many instances, however, the symptoms indicating extravasation are very clearly marked: of a great number of cases which I have met with in books and in practice, I shall relate the prominent circumstances of one, to illustrate this observation.

*Compression of the Brain from Depressed Bone.*—Fractures of the skull, as they are produced in a variety of ways, must differ very materially in their nature and extent. The numerous divisions of the ancients, founded upon these circumstances, are, however, of little importance. The chief differences now regarded, are the degrees of pressure and irritation.

Fissures or cracks in the skull, unattended by a depression of one of the fragments, are not dangerous, and very readily heal without unpleasant symptoms; but must occasion all the symptoms which are produced by pressure from an effused fluid: accordingly, we find that

patients thus circumstanced are generally affected with the same apoplectic symptoms,—a complete or partial loss of sense, speech and voluntary motion—stertorous breathing, followed by vomiting, vertigo, hæmorrhage from the ears, nose, mouth, &c. Now these symptoms often occur without a fractured skull, as has already been remarked; and, on the other hand, many cases of fractured skull, even where the bone is considerably depressed, are unaccompanied by them. “I once saw a woman,” says Dorsey, “who had been assaulted by a lunatic, and struck forcibly with an iron bar: I found her skull fractured near the junction of the parietal bones, a depression existed, which in one part was full half an inch below the natural level, and yet none of the usual symptoms of compressed brain occurred, and the fracture healed up without any dressings except a superficial plectet.” Similar cases are recorded.

Fractures of the skull, although they occasionally produce no unpleasant symptoms, are, notwithstanding, accompanied with many dangers. In addition to the evils to be dreaded from pressure upon the brain, the irritation occasioned by the mechanical action of the sharp and irregular edges of the bone upon the dura mater and brain is to be feared. The constant pulsation of the vessels upon the brain, which produces motion under the fracture, augment considerably the irritation in consequence of which the dura mater sometimes ulcerates.

In many cases of fracture of the skull, the dura mater is pierced and the brain wounded by the body which caused the accident, or by a fragment of the bone being forced through these parts. In some instances, portions of the substance of the brain escapes through the fracture at the time of the accident. In sabre wounds, slices of brain, together with considerable portions of the skull, are sometimes removed.

*Inflammation of the Brain and its Membranes.*—Mr. Abernethy very judiciously remarks, that, “in the generality of cases of injury done to the head, the symptoms of *concussion*, *compression*, and *inflammation*, are so combined as to appear inexplicable. It is only by an attention to those rare cases, in which the symptoms of each appear distinctly, that we are likely to increase our knowledge of their specific effects.” Inflammation of the brain and its contents, is a consequence of different species of violence to which it is subject, and therefore its symptoms will be more or less blended with those resulting directly from the accident, as stupor, &c.

The dura mater, the pia mater, and the whole substance of the brain, is liable to inflammation.

Mr. Abernethy remarks—“If the inflammation be violent and general, the patient will be irrational and disturbed, having his mind strongly affected by wrong ideas, and endeavouring to act in consequence of them. If the inflammation be moderate, and affect the surface only, he will be irrational, uneasy, restless, and perhaps endeavour to get out of bed, but without the violence of mania. Should a moderate inflammation be blended with the effect of concussion, he will have less appearance of irrationality, will lie pretty quiet, and inattentive to slight impressions.



Some variety will occur, probably, in the symptoms of different patients; but in all there will be more or less derangement of the powers, both mental and corporeal, depending upon the degree of inflammation, &c. The symptoms which chiefly characterize the complaint, are those of an increase of sensibility; the pupils of the eyes are contracted, the patient often withdraws his arm on being touched, and his pulse and tongue denote general as well as local inflammation.

Suppuration takes place when the remedies are unsuccessful in arresting the progress of the inflammation; and when this happens, the symptoms of compressed brain are repeated, and a deep coma or lethargy comes on. The pus or matter in this case is very often situated directly under the skull, but sometimes under the dura mater—at other times an abscess is found in the brain.

Although inflammation of the brain generally occurs in a few days after the accident which causes it, yet in some cases, a week, or even a month will elapse before its commencement.

### *Common Treatment.*

Bleeding, blistering, mercurial purges, trephining or trepanning.

I have little or no confidence in general blood-letting. It produces injury by the debility which it occasions; and, besides, it prevents the restorative process. Other means are much better to mitigate the violence of arterial action, or excessive inflammation.

As regards the trephine, I have still less confidence in it. From all the information I can obtain respecting its effects, I think it has killed *ten* where it has cured one, and I am not at all surprised that Desault, in the last years of his practice, should abandon the use of this instrument altogether, in consequence of the fatal effects which followed its use. Formerly it was very fashionable to trephine for even trivial injuries of the head; but for some years past, surgeons have become less partial to the operation, from the notorious bad effects which have followed the operation; but it is still, I regret to say, too much practised. We are directed to trephine, to remove depressed pieces of bone, in order to relieve compression of the brain; but in doing this, we make a compound fracture, and which is more mischievous in its effects than the wound for which the operation is performed.

It is very evident to all who are in the least acquainted with injuries of the head, that patients do well in very bad cases of compression without elevating the bone; that they recover and do well, when this very operation, under similar circumstances, proves fatal; and it can readily be accounted for: two severe wounds of the head are much more likely to kill a person than one. It is hardly possible to bore a hole in a person's skull down to the dura mater, or its vicinity, and not produce a dangerous wound. But when this is done in addition to a previous serious injury, what beside can we expect but lamentable consequences. It is hardly possible that irritation, inflammation or suppuration will not supervene.

In compression from a depressed bone, we may apply the old maxim: "of the two evils, choose the least." If the pressure on the

brain be an evil, and if the operation is still greater, would not common sense dictate to us the propriety of pursuing that course of treatment which, we know by experience, is attended with the least danger. Another objection to the use of the trephine is, that it is often extremely difficult to discriminate between concussion and compression of the brain. Hence, there is no sure criterion for performing the operation.

Says Sir Astley Cooper, "The old practice used to be, the moment an injury of the brain was suspected, and the least depression of the bone appeared, to make an incision into the scalp. This is putting the patient to considerable hazard; for the simple fracture would, by the incision, be rendered compound. In simple fracture, then, when it is attended with symptoms of injury of the brain, deplete before you trephine; and when it is unattended with such symptoms, deplete merely, and do not divide the scalp, &c. If the fracture be compound, the treatment must be very different; because a compound fracture is very generally followed by inflammation of the brain; and it will be of little use to trephine, when inflammation is once produced. If the inflammation come on, the patient will generally die, whether you trephine or not;" and it is added, that the operation will even be likely to increase the inflammation, which has been excited by a depressed portion of the skull. "The rule," says Sir Astley, "which I always follow, is this: when I am called to a compound fracture with depression, which is exposed to view, whether symptoms of injured brain exist or not, I generally use an elevator, and very rarely the trephine. I put the elevator under the bone, raise it, and if it has been comminuted, remove the small portions of bone."—(*Lectures, &c.* vol. i. p. 304. 308.) Of the propriety of using the elevator in such cases, and also of taking away loose fragments, there cannot be a doubt.

2d. The operation is recommended for the purpose of giving exit to extravasated blood, or collections of pus or matter. But I would ask, how are we to know when either of these fluids are collected, and in what part of the brain they are located, whether between the skull and dura mater, or the ventricles, or on the pia mater, or under this membrane, on the surface, in the substance or cavities of the brain? How, then, I ask, can the trephine be used with any propriety, or the least prospect of success? It is impossible to tell in what part of the cranium or skull to *bore the hole*, or to make the perforation. But even should we be so fortunate as to make it in the right place, and remove the extravasated fluid, it can only, at best, afford partial relief; and there is ten times more danger to be apprehended from the additional wound, and subsequent inflammation, than from any collection of blood or matter, for which the operation is performed. These, by proper treatment, will be removed by the absorbent vessels.

"The case of extravasation between the cranium and dura mater," says Samuel Cooper, "is almost the only one which admits of relief from trephining. Mr. Abernethy informs us, that in the cases which he has seen of blood extravasated between the dura and pia mater, on a division of the former membrane being made for its discharge, only the serous part of it could be evacuated; for the coagulum was spread

over the hemisphere of the brain, and had descended as low as possible towards its inferior part, so that very little relief was obtained by the operation.”—(*Surgical Works*, vol. ii. p. 46.) This statement is confirmed by that of Bichat, and the practice inculcated agrees with what Sir Astley Cooper also directs. Therefore, it appears evident that it is improper to use the trephine with a view to remove any extravasated fluid.

I, therefore, cannot see the benefit resulting from this operation, which is held out by many surgeons; neither have I any evidence that it has ever been of any service, although occasionally there may have been cases in which it has proved useful; but they are so seldom, and it is so uniformly attended with injurious or fatal effects, that I think, in almost, if not in every instance, it ought to be dispensed with.

Should any instrument be used to enable the practitioner to remove pieces of bone, or to elevate any portion that is depressed, the instrument invented, or recommended by Hey, is preferable to the trephine. The inventor remarks, that “the purposes for which any portion of the cranium is removed are, to enable surgeons to extract broken fragments of bone, to elevate what is depressed, and to afford a proper issue to blood or matter that is or may be confined, &c.

“When a broken fragment of bone is driven beneath the sound contiguous part of the cranium, it frequently happens that the extraction cannot be executed without removing some of the unbroken part, under which the fragment is depressed. This might generally be effected with very little loss of sound bone, if a narrow portion of that which lies over the broken fragment could be removed. But such a portion cannot be removed with the trephine. This instrument can only saw out a circular piece. And, as in executing this, the central pin of the saw must be placed upon the uninjured bone, it is evident that a portion of the sound bone, greater than half the area of the trephine, must be removed at every operation. When the broken and depressed fragment is large, a repeated application of the trephine is often necessary, and a great destruction of sound bone must be the consequence.

“When the injury consists merely of a fissure with depression, a small enlargement of the fissure would enable the surgeon to introduce the point of the elevator, so as to raise the depressed bone. But a small enlargement of the fissure cannot be made with the trephine. When it is necessary to apply the elevator to different parts of the depressed bone, a great deal of the sound cranium must be removed, where a very narrow aperture would have been sufficient.

“The same reasoning will apply to the case of openings made for the purpose of giving a discharge to extravasated blood or matter.

“If a saw could be contrived which might be worked with safety in a straight or gently curvilinear direction, it would be a great acquisition to the practical surgeon. Such a saw I can now with confidence recommend, after a trial of twenty years, during which time I have rarely used the trephine in fractures of the skull. Its use has been adopted by my colleagues at the General Infirmary in Leeds; and will be adopted, I hope, by every surgeon who has once made trial

of it." Mr. Hey next informs us, that the instrument was first shown to him by Dr. Cockell, of Pontefract; but that there is a saw formed on the same principle in Scultetus's *Armamentarium Chirurgicum*.

In order further to illustrate my views on this subject, I shall quote some remarks by Dr. Samuel Cooper, and others.

If, then, it be asked, in what does concussion consist? the answer is, that if it be slight, it is merely a disturbance of the circulation in the brain; if violent, the brain is lacerated. A knowledge of this leads to a judicious treatment of the injury, as laceration of the brain is frequently followed by extravasation: and concussion in the commencement, may be compression in its result.

### *Reformed Practice.*

"Watch your patient," says Sir Astley, "with the greatest possible anxiety; visit him at least three times a-day; and if you find any hardness of the pulse supervening, after the first copious bleeding, take away a tea-cupful of blood; but do not go on bleeding him largely, for you would by this means reduce the strength of the patient too much, and prevent the reparative process of nature. It is necessary that there should be a slight degree of inflammation, for without this the reparative process cannot proceed, or the patient ultimately recover; but it will be your duty to keep this inflammation within due bounds. I shall mention a case in which fatal consequences ensued from the error committed by the surgeon in bleeding his patient to such excess, that the slight degree of inflammation necessary for adhesion was removed, and the restorative process of nature consequently prevented.

"In these Lectures, gentlemen, I feel it to be my duty to describe to you surgery as it is, and not in the glowing colours in which it is painted to you in books. I am most anxious that you should omit nothing which may contribute to increase your professional skill, and enable you to afford the greatest possible degree of relief to the sufferings of humanity; but those who blazon forth our profession as one which is attended with undeviating success, are only deceiving you. You must hear the untoward cases of your profession, as well as those of which the issue is favourable, in order to form a correct judgment in your minds of what surgery really is. It is for these reasons, that I shall never hesitate, "*coute qui coute*," to detail to you, and perhaps to the public, those cases which have terminated unfavourably. I have a duty to perform, and I shall never shrink from the discharge of it. It is by detailing to you the unfavourable as well as the favourable cases, that I can alone perform that duty; for it is by such a course alone that I can point out to you the rocks which you are to avoid, as well as the haven in which you are to endeavour to anchor. The case to which I last alluded, was one of concussion, accompanied with slight laceration of the brain, which occurred in the other hospital. The gentleman, under whose care the patient was, thought it right to bleed him, and that he could not bleed him too largely. He accordingly bled not only from day to day, but twice a day. The consequence of this mode of treatment was, that the patient became perfectly pale, was in a state of considerable dejection,



not of the mind, but of the powers of the body, and died, without any symptoms of inflammation of the brain, ten days after the injury. On examination of the head, it was found that there was a slight laceration of the brain, with some degree of extravasation of blood; but that not the slightest attempt had been made by nature to heal the wound. You are aware that the brain heals, like any other organ, by the process of adhesion; but, in this case, the quantity of blood taken from the patient was so large, that the slight inflammation necessary to the adhesive process was removed, and the powers of restoration consequently prevented.

"You are to use bleeding as a means of preventing inflammation; but you are not to resort to it as a matter of course, the moment you are called to a patient under concussion. A man falls from his horse, and the instant he is raised from the ground some surgeon thinks it necessary to use the lancet. This conduct is quite irrational; for, suppose the pulse could scarcely be felt at the wrist, and the surgeon were in such a case asked why he proceeded to bleed, what would his answer be? The probability is, that he could make no reply; or he would perhaps say, that he bled because the accident had determined a great quantity of blood to the brain. It is not with this view that we bleed in concussion, but in order to prevent inflammation. I have seen patients, who would have died if a large quantity of blood had been taken away at the time of the accident. Thus, in the case already described, when I first saw it the pulse was scarcely perceptible. I took a little blood from the arm, and the patient was immediately seized with convulsions, like an epileptic fit, which I thought would have proved fatal. I closed the arm, and I would not upon any account have taken more blood from him at that moment."

*Trephining for after symptoms.*—For the symptoms remaining after concussion, the trephine used to be employed; but it now becomes a question, whether it ever ought to be resorted to in these cases? What will trephining do? Probably great harm, by disturbing the brain; and, if not, no good can possibly result from it. Now for the proofs: first, that it does no good. Gentlemen, I never lecture to you but from the recollection of some case that has occurred to me, from which I form my opinion. In a former part of this lecture, I mentioned to you a case of great irritability of the stomach, produced by concussion, the effect of a blow on the forehead, which happened at Yarmouth, in Norfolk. Mr. W. Cooper, formerly surgeon of Guy's Hospital, visited this gentleman, and prevailed upon him to suffer the trephine to be applied upon the part of the forehead on which the blow was received; and, when the bone had been removed, the dura mater was sound, and no relief whatever arose from the operation: a direct proof that it is useless. Dr. Farre informed me, that he knew a person who was subject to epileptic fits after concussion of the brain. The operation of trephining was performed, and he died soon afterwards.

Forty years ago, trephining used to be the plan generally adopted with the patients admitted into the London hospitals; many were submitted to the operation; inflammation of the membranes of the brain supervened, and nearly all died; recovery being very rare.

But do our patients now die from the effects of concussion? No; by depletion we rarely lose a patient.

After the expiration of my apprenticeship at these hospitals, I went over to Paris, to see the practice of Desault, at the Hotel de Dieu; and I found that scarcely ever, under any circumstances, did he trephine; and he was more successful than the English surgeons. Trephining in concussion is now completely abandoned.

*The Treatment of Fractures of the Skull* is as follows: when there is fracture, unaccompanied with symptoms of injured brain, you will not trephine; but you must, by the application of adhesive plaster, endeavour to heal the wound in the scalp as quickly as possible. Let your constitutional treatment be that of depletion. This plan removes symptoms of concussion, and even extravasation, which accompany these fractures; and often a few hours will show you that the application of the trephine, which you at first might have thought indispensable, is rendered unnecessary. It is wrong, therefore, to decide hastily in these accidents; for irreparable mischief might arise from your making an incision, and converting a fracture which was simple into one that is compound. Wait, then, for a time before you operate in such cases, for the purpose of seeing what effects may be produced by bleeding and purgatives. It not unfrequently happens, in these hospitals, upon persons being brought in who have received injuries of the head, that the dresser in attendance will bleed them immediately after their admission, and send for the surgeon; before whose arrival the good effects of the loss of blood are apparent, and the symptoms of concussion, and even of extravasation, have lessened, so as to lead to a different view of the case. This shows how necessary it is that you should not be precipitate. If you act prudently, therefore, in these accidents, you will try bleeding and purgatives before you operate; and the depletion will prove of the greatest possible advantage in preventing inflammation: from which arises a principal danger.

*Apparent Depression.*—After blows have been received upon the head, it often happens that, upon examining the scalp, there appears to be depression of bone to a great extent, when, in reality, there is none. Let me put you on your guard here in this respect. A person receives a blow on the scalp: the parts immediately surrounding the spot where the blow was received swell from the extravasation of blood; but at the part on which the blow directly fell, the cellular membrane, having been condensed by the injury, will not receive the extravasated blood; thus the surrounding parts are considerably higher than the middle; and the character of the contusion is certainly calculated to deceive those who are unacquainted with the nature of these accidents. I have several times seen these appearances; but the first case which I recollect of it in my own practice was that of a child brought into Guy's, who had received a severe blow on the head from a brickbat. All present were prepared for the operation, fully expecting that I should apply the trephine; for they felt convinced that there was considerable depression of bone; and when I stated that I should not operate, they exclaimed, "Good God! I wonder what can be his reason." This child, after having been freely bled

and purged, in two or three days recovered, and the appearance of depression vanished.

I have been often sent for by my dressers to these cases, and have been requested to bring my instruments with me ; but upon examination have found that there was no depression of bone, and that the uneven appearance of the scalp was produced by the cause before mentioned.

It also very often happens in fracture of the cranium, that considerable depression of bone will happen from the external table of the skull being driven into the diploe, without producing the slightest injury to the internal table : do not, therefore, be precipitate in your diagnosis, nor hastily determine upon performing an operation which you might afterwards have reason to repent.

Suppose you are called to a patient who has had a severe blow on the head, and on examining the skull you find a portion of bone considerably depressed. You may still find this man capable of giving a history of the accident, and his mind is not at all affected. On the other hand, you may be called to a person who has a fracture of the skull with depression, and who has lost the powers of his mind. If the fracture be simple, and there is no wound in the scalp, and no symptom of injury to the brain, it would be wrong to make an incision into the part, and perform the operation of trephining ; for, by making such an incision, you add greatly to the danger of the patient, as you may make what was before a simple, a compound fracture, and consequently greatly increase the danger of inflammation, which rarely follows fracture with depression, where the fracture is simple, but is a very frequent consequence of a compound fracture, which is produced by making an incision in the scalp. Never make an incision, therefore, when you can avoid it, or merely because there is a fracture with depression, if there be no symptoms of injury to the brain. Even if there be symptoms of injury to the brain, and the fracture be simple, do not immediately trepan. Take away blood, and purge your patient freely, and see how far the symptoms may be the result of concussion of the brain, and not of depression. If the symptoms do not yield to depletion, then, and not till then, perform the operation of trephining. I was called to a lady who had fallen against a projection in a wall, in walking across her parlour. The os frontis was driven in, but there were no symptoms of compression of the brain. I bled her, and guarded cautiously against inflammation, but there was no necessity for elevating the portion of the bone. This lady never had any symptoms of injury to the brain, and she recovered by depletion alone.

The old practice used to be, the moment an injury to the brain was suspected, and the least depression of the bone appeared, to make an incision into the scalp. This is putting the patient to considerable hazard ; for the simple fracture would, by the incision, be rendered compound.

The rule, therefore, which I always follow is this : When I am called to a compound fracture, with depression which is exposed to view, whether symptoms of injured brain exist or not, I generally use an elevator, and very rarely the trephine. I put this instrument under the

bone, raise it, and if it has been comminuted, remove the small portions of bone. The elevation of the bone is not followed by any mischief; but if you do not raise it, and inflammation follows, it will be too late to attempt to save the life of the patient.

*Mischief of Depression not immediate.*—The mischief of depression is not, however, always immediate; the patient sometimes recovers from the first symptoms, but is thrown by any hurried circulation, at a subsequent period, into a new train of effects, which still require surgical assistance; and it is upon that account, if there were a wound, and I felt much depression, that I would immediately elevate the bone; but if no wound, I would wait the production of symptoms.

*Danger of the Operation.*—Some surgeons assert that it is a trifling operation, and not difficult to perform. But they would deceive you. It is one of the most dangerous operations in surgery. Whilst performing it, there is but a thin web between the instrument and the brain; cut through this, and the destruction of life will generally be the consequence. Mr. Hunter thought that when the dura mater was wounded, the person scarcely ever recovered. [*Cooper.*]

“It is a high source of gratification to be able to record,” says Dr. Reed, “that, in this country, the trephine is now much more seldom used than formerly. But a few years ago, on a man being stunned by a blow or a fall, to any considerable extent, almost any neighbouring physician would apply the trephine without hesitation, and the facility with which this operation can be performed, offers no small temptation to the mere operator, especially as there is seldom any risk of life, and always a gain in reputation among the multitude. It is now very generally viewed, as it ought to be, as a dernier resort in such cases; and the use of it is not countenanced, unless the symptoms of compression by depressed bone, or extravasated blood, are altogether unequivocal.”

“I have seen scores of persons, who would formerly have been trephined, without even a “trial by jury,” recovered from coma, paralysis, and convulsions, justly attributable to compression on the brain, by very large and copious bleedings, aided by cathartics and stimulating frictions and cataplasms to the extremities.

“In the year 1819, I assisted Dr. Henry Wm. Ducachet, then a practitioner in the city of Baltimore, in the performance of this operation on a woman who had received several blows on the head with an axe from a brutal husband. We could discover no depression of bone, and yet the coma, stertor, hemiplegia, and other evidences of compression, resisted all our depletion, and on the third day after the violence, we determined to apply the trephine, being sustained by judicious counsel in our opinion, that there must be extensive extravasation of blood beneath the cranium. On removing the circular piece of bone, with the largest crown of the instrument, a coagulum was found extending over the left hemisphere of the brain, exterior to the dura mater. This being removed, and only a mitigation of the symptoms following, the obvious distension of the dura mater itself, pointed out the existence of still more extended mischief. We therefore divided the dura mater with a probe-pointed bistoury, for the space of half an inch, when coagulated blood to an immense extent forced itself through the opening. After washing out the cavity by warm water thrown in



with the syringe, we were delighted to find the entire removal of the symptoms instantaneously result. Our patient spoke for the first time, asked for water, seemed as though awoke from an ordinary sleep; the stertor ceased, the dilatation of the pupil and hemiplegia were removed, and the most sanguine hopes were entertained of her recovery.

"I shall never forget the painful acuteness of our disappointment, when in a few hours we found all these dangerous symptoms return in a still more aggravated form, discovering to us the mortifying truth, that *though the operation had succeeded, yet our patient would die*; for although we had removed the coagula, we could not stop the bleeding vessel."

Having, I think, very clearly shown the little benefit, as well as the positive injury, resulting from the use of the trephine, I shall now lay down such treatment as I have found remarkably successful in every injury of the head, concussion, compression, extravasation, inflammation, &c.; and I have to observe, that I have never had occasion to use this or any other instrument.

The indications of cure, in almost every injury of the head, are nearly alike; and it may be said that the greatest danger arises from an untimely interference of art; from the officiousness of the practitioner, in doing too much; by intercepting the healthy effort of nature, instituted to effect a cure. Our principal object should be, in every injury of the head, whether concussion, compression or extravasation, to prevent excessive inflammation, and if already established, to moderate it.

In the first place, when called to an accident of this nature, we should endeavour to ascertain, by careful examination, the situation, nature and extent of the injury. When this cannot be done by superficial examination, it may be necessary to shave the hair from a portion of the head, or in that part which appears to be the seat of the injury, by which an opportunity will be afforded to discover it.

An inflammatory spot, or small tumour, often appears over the part, or by the uneasiness expressed by the patient upon pressure, or by his frequently lifting his hand, and applying it to a particular portion of the head. This is of practical importance, as it is necessary to know whether a wound has been made or not, either in the integuments or bone. Should we discover any laceration, or wound, which requires dressing, the same treatment must be adopted as has been recommended in the commencement of this chapter.

In the next place, the irritation or pain demands our attention, and almost every bystander will cry out, "bleed the person, bleed the person;" and that too when, perhaps, he is in a state of asphyxia, or when he is motionless and senseless. In every case, I believe, to which I have ever been called, this has been the language of the populace, or bystanders; and if the practitioner is not possessed of much decision of character, he will comply with their request, and he may kill the person by taking even a small quantity of blood before reaction takes place. If he is bled at all, it should not be under two hours after the accident; and even then, I cannot believe that it has any decisive good effect; except, perhaps, that it may afford temporary

relief; but, on the contrary, it is often productive of positive injury. I have tried it, and therefore consider myself a competent judge. And the reasons have already been assigned in another part of this work. Local bloodletting, however, particularly by cupping, I have occasionally found beneficial; probably from the counter irritant effect which it produces.

1st. *Opiates*.—If the patient is in great pain or distress, administer an anodyne; and one combined with a diaphoretic is preferable, such as the *diaphoretic powders*.

A pill made of the gum opium is very good. I have never seen any bad effects follow the use of opiates, as some have intimated, but they have been attended with the best effects. Anodynes appear to prevent an undue flow of blood to the injured part, by lessening the irritability and commotion of the system. They may be repeated as occasion requires.

2d. *Purgatives*.—Purgatives are exceedingly valuable in every injury of the head. And whoever reflects a moment upon the connexion between the stomach and the brain will realize their utility. They are beneficial by lessening the quantity of the circulating fluid in the system, or, in other words, by their depletive effects. They may be given every day or two, according to the urgency of the symptoms, or according to circumstances. Our common purgatives may be given, and occasionally changed for senna, manna and cream of tartar.

3d. *Perspiration*.—It is always necessary, either to prevent or reduce inflammation, to keep the skin moist, and therefore diaphoretic or sudorific medicines must be given to fulfil this indication. If the *diaphoretic powders* which are given are not sufficient for this purpose, give the sudorific drops. At the same time let the surface be frequently bathed with *tepid ley-water*. This contributes much to allay constitutional disturbance, or sympathetic fever, as well as to the comfort of the patient.

*Cooling or refrigerant Lotions*.—In all *Injuries of the Head*, there is a determination of blood to it, causing a preternatural degree of heat or inflammation. To reduce this, surgeons recommend cold or ice water; and although some benefit may be derived from their application, they, in general, are followed by some injury resulting from the sedative effects of the cold. I have found the following application preferable to any other, applied *cool*, but not *cold*. Take equal parts of *spirits, rain water* and *vinegar*, to which add a little *fine salt*. Let linen or muslin be wet with this liquid and applied to the head, over which tie a handkerchief, or nightcap.

*Fomentations*.—After this has been applied awhile, let it be removed, and the following used, particularly if the patient does not improve as much as is desirable. Take *hops* and *wormwood*, equal parts; simmer in vinegar until they are soft, or the strength is extracted; then enclose in flannel, and apply to the head; to be occasionally renewed. This fomentation affords essential benefit, by its anodyne and refrigerant effects.

*Poultices*.—When any particular part of the head has been wounded, after the hair has been removed, apply a *slippery elm poultice*. I

have seen wounds of the scalp assume a perfectly white and healthy appearance, only in six hours after applying this poultice. It seems almost impossible for inflammation to exist on any part where it is applied. In one or two cases I applied it over the whole head with decided benefit. But when it is applied, the whole hair must be first shaved from the head.

*Counter Irritation.*—Mustard plasters applied to the nape of the neck, or between the shoulders, will often relieve the head. I have applied blisters, but I think the mustard is better, as it produces the same effect as the blister, without any of the subsequent effects which arise from it. The mustard should be mixed with an equal quantity of Indian meal, and moistened with vinegar. They should also be applied to the feet.

*Bathing the Feet.*—Among all the means used to prevent inflammation, and allay irritation, there are none better, however simple it may be, than immersing the feet in warm *ley-water*, two or three times a day. The patient, when restless and wakeful, will often fall asleep immediately after this operation. The manner in which it proves beneficial, is *by equalizing the circulation*.

After a person has received an injury of the head, the extremities become cold, while the head becomes unusually hot. The reason is obvious: the blood retreats from these parts, and flows in an undue quantity to the brain. Immersing the feet in the warm water recalls the blood from the upper to the lower extremities, and the balance of the circulation is thereby restored.

*Emetics.*—I have seldom given emetics in any stage of injuries of the head, as they have appeared to me rather calculated to injure than benefit the patient. But when the acute stage of inflammation has subsided, and the brain still appears affected, and it assumes something of a chronic character, as is sometimes the case, *gentle emetics* may prove serviceable. But on the first attack of the injury, they ought to be prohibited.

*Cupping.*—I have found some advantage from the operation of cupping. The benefit is derived not from the quantity of blood abstracted, but from its counter irritating effects. I recollect one case where a person fell from a building, more than twenty feet, and struck the fore part of the head upon the ground, which rendered him senseless, and produced enormous swelling of the eyes, and adjacent parts. Means were taken to reduce the inflammation, which partially succeeded; but, in consequence of the concussion and extravasation which followed, he was senseless and delirious for two or three weeks. Soon after the accident, it required several men to confine him in bed; but after having been cupped, these urgent symptoms were relieved, and the patient recovered.

I have successfully treated severe injuries of the head, without resorting to the use of cups; but I have found that the application of three or four of them, where not more than half a gill of blood was taken, has been attended with a better effect than when a quart has been drawn from the arm.

*Leeches.*—When there has been a severe contusion about the eyes, I have occasionally applied leeches; and I think with some little

benefit : but from the hæmorrhage that follows, and the inflammation proceeding from the bites, I am not very friendly to the operation. If it should be deemed requisite to apply them, I would observe, for the benefit of those unacquainted with the fact, that American leeches are equal to any that are imported. Neither cupping nor leeching possesses half the power in removing inflammation, swelling, extravasation, &c., as the slippery elm bark poultice. No matter how black the part is rendered by the contusion, this poultice soon removes it.

*Rest or Quietude.*—The patient must be kept from noise as much as possible, as this aggravates all the symptoms.

The above treatment I have found uniformly efficacious and successful, in all injuries of the head, within the reach of physic or surgery ; in concussion, compression and extravasation.

What then, says an objector, do you never trephine, to elevate or remove the bone, in any case whatever ? In answer to this, I have to observe, that in all my practice, and I have had my share in different kinds of injuries of the head, I have had no occasion to resort to it in a single instance. I have had the very worst cases that could occur, and have succeeded beyond my expectations, by pursuing only the treatment here laid down. And it consists in a reliance more fully upon the sanative powers of nature than art.

When the bone has been depressed, and even very serious symptoms have appeared from such compression, I have rather chosen to trust to the restorative powers of nature, than the danger and uncertainty of the trephine ; which, as far as my observation, experience as well as history proves, has almost uniformly proved fatal. There is not near the danger to be apprehended from any pressure that a *broken bone* may make upon the skull, which arises from the additional injury of a compound fracture occasioned by the trephine. The chance of recovery is certainly much greater, in all cases that I have seen or heard of, without, than by an operation.

If there be splinters of bone, they should of course be removed ; and if the depressed portion of bone can be raised without causing too much irritation, it would be justifiable to do it ; and, possibly, cases may occur where Hey's saw could be used with impunity and advantage. But I have never seen any such case ; and I believe there are very few instances where any instrument ought to be resorted to.

I might detail numerous cases to illustrate these sentiments, and there are enough on record, of the same nature, to prove that there is no necessity for trephining, in even compression of the brain.

A case occurs to me, which I attended some time ago, in which a large portion of the os frontis was driven in upon the brain, by a stone, causing loss of sense, dilatation of the pupil of the eye, convulsions, &c., and having all the symptoms for which trephining is recommended ; and yet the patient recovered by the treatment here laid down. The bone still remains depressed, but still without injury.

Some time ago, a woman was struck, by her husband, with an iron instrument, which produced an extensive fissure in the skull, with



great depression of the bones, notwithstanding which, the patient did well.

Another case occurs to me, in which a person fell from a considerable height, upon a stone, and which wounded the head in a most dangerous manner. The wound bled for several hours, and delirium and inflammation succeeded; but, by pursuing the treatment which I recommend, he recovered.

A grocer, of this city, a short time since, was thrown from his cart, and so exceedingly injured, that it seemed impossible for him to live but a short time. There were several wounds of the scalp, contusion, concussion, extravasation, if not compression. Yet this man has so nearly recovered, that he feels only some chronic affection of the brain.

A man was thrown from a building, which wounded his head in such a manner that his life, for some time, was despaired of. The contusion, concussion and inflammation were excessive, and which resulted, no doubt, from extravasation of blood or pus; and yet the man, under the same treatment, recovered.

A vast number of cases might be mentioned, and given in detail, if the limits of this work would permit. I will relate a few more, recorded by Mr. Abernethy.

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*Cases of Fracture of the Cranium with Depression, which terminated favourably, although no operation was performed.*

CASE I.

A woman, about 40 years of age, was admitted into the hospital for a wound on her head. About a week before she applied for advice, her husband had knocked her down with a brass candlestick. She was stunned by the blow, and lay for some time senseless; but, on recovering, she felt no other inconvenience than the soreness occasioned by the wounded integuments. She had suffered some slight indisposition since the accident.

On examining the head, the right parietal bone was found denuded about two inches in extent; a fracture of the same length was also to be felt, and the bone on one side of the fracture was depressed about the eighth of an inch. She remained in the hospital a fortnight, without any bad symptom occurring, and was then, at her own desire, discharged, although the wound was not perfectly healed.

CASE II.

A boy, about twelve years old, received a kick from a horse in Smithfield, which stunned him, and he was immediately brought to the hospital. The integuments of the forehead were divided by the injury, and the lower part of the os frontis, and superciliary ridge of the frontal bone, depressed at least a quarter of an inch below its original level, the depressed portion measuring about an inch and a half in length.

It is obvious that the bone could not be thus depressed without a fracture of some part of the basis of the skull occurring at the same time, on which account the case might be considered as more dangerous. In less than two hours he had recovered from the immediate effect of the blow, being at that time perfectly sensible. Fourteen ounces of blood were taken from his arm, his bowels were emptied by a purge, and saline medicines, with antimonials, were directed to be given. He went on tolerably well for two days, at the end of which time, evident symptoms of considerable irritation of the brain took place. He now complained of pain in his head, slept little, and, when dozing, often started, or was convulsed in a slight degree. To remove these symptoms, he was bled twice, took opening medicines occasionally, was kept quiet, and without light, and was allowed only a spare diet. By continuing this plan for about three weeks, he perfectly recovered.

## CASE III.

A man, between thirty and forty years of age, received a blow on the forehead from a brick thrown at him, by which the frontal bone was fractured about half an inch above the orbit; the fracture measured two inches in length, and the upper portion of the bone was depressed about the eighth of an inch. He was not even stunned by the blow, and walked to the hospital without assistance, complaining only of soreness in the wounded integuments. Sixteen ounces of blood were immediately taken from his arm; he was confined (much against his inclination) to a scanty and liquid diet, and was purged every second day. This patient did not experience any illness, and the wound soon healed.

## CASE IV.

A boy, about thirteen years old, had a fracture, with depression of part of the temporal and parietal bones. By similar treatment, he also escaped without any material ill consequences; but, in this case, part of the injured bone exfoliated.

## CASE V.

A girl, thirteen years old, had a considerable fracture, with depression of the left parietal bone. She was not brought to the hospital until ten days after the accident. When admitted, she was feverish, had pain in her head, and the little sleep she got was very much disturbed; but, by the use of bleeding, with antiphlogistic medicines and regimen, she soon got perfectly well.

The cases above related are not offered to notice on account of any striking peculiarity attending them, but merely to show that such are not unfrequent, as they all occurred within the course of a year. From amongst a great number of similar cases, I shall select the two following, as the symptoms attending them were more violent than ordinary.

## CASE VI.

A lad, seventeen years of age, had his head pressed between a cart-wheel and a post, by which accident the scalp on both sides was turned downwards, so as to expose the lower half of the parietal bones, the squamous part of the temporal, and also part of the frontal and occipital bones, about a quarter of the cranium being thus completely denuded. The periosteum was in several places stript off from the skull, the scalp much bruised, and the posterior and inferior angle of the left parietal bone was beaten in. The visible part of the depressed portion was an inch in length, and more than an eighth of an inch below the level of the cranium; but the fracture extended along the squamous part of the temporal bone towards the basis of the skull: it could not, however, be traced, as the temporal muscle had not been removed from that part by the injury. The scalp, being cleansed, was replaced, retained in its situation by slips of sticking plaster, and a slight pressure by bandage was applied. The boy was perfectly sensible, his pulse regular, and not quickened. He had bled considerably from the temporal artery, which had been divided by the accident: eight ounces of blood were, however, taken from his arm, and some purging medicine was administered next morning, which procured three or four stools. The next day, (*Friday*), his pulse beat nearly 120 in a minute; his skin was hot and dry, and he complained of pain in his forehead. Twelve ounces of blood were taken away, and four grains of pulvis antimonialis ordered to be given three times a-day. On *Saturday*, the former symptoms still continued, and were rather increased. The antimonial powder made him sick, or at least increased his disposition to be so. Fourteen ounces more of blood were taken from him; the vibratory feel of his pulse not being altered until that quantity was taken away: the blood, on standing, appeared very buffy. His skin, notwithstanding all this, still remained extremely dry: some antimonial wine was given, which produced vomiting. On *Sunday*, his pulse was evidently lowered by the evacuations he had undergone, but it was still quick, and sufficiently strong. The pain of the head remained as before. Having a sufficient number of stools, and the sickness still continuing, the antimonial powder was omitted. He was bled, however, in the vena saphena, and his feet and legs were afterwards immersed in warm water; during which, he, for the first time, perspired copiously. A blister was also applied to his neck. The scalp united, with only a trifling suppuration over the fractured part of the bone; and to this ready union, the lowering plan, by preventing inflammation, seems very materially to have contributed. The matter collected over the fracture was discharged by a puncture, and the boy got well.

## CASE VII.

A lad, eighteen years of age, had the squamous part of the temporal bone beaten in. The fracture ran horizontally, about a quarter of an inch above the zygoma, and could be distinctly traced with the finger, introduced through the torn scalp and temporal muscle, for two inches. The upper part of the bone was depressed about one eighth of an inch, and it was impossible to trephine below the fracture in order to elevate

the depressed portion. The lad had recovered from the immediate stunning occasioned by the injury ; nor was there any symptom that indicated material derangement of the functions of the brain from the pressure which it sustained. He was bled largely, and took a purging medicine, and was moderately well on the following day. On the second morning he was again purged, and when I saw him at noon, nothing materially wrong appeared ; but when I came to the hospital at eight in the evening, I found he had gradually become delirious, and that he then could scarcely be kept in bed. His skin was hot, and his pulse frequent and strong. These symptoms could be attributed to nothing but inflammation of the brain ; he was therefore immediately and largely bled. He now became quiet and manageable, but the next morning his replies to all questions were incoherent, his pulse frequent, his skin hot, and his tongue dry. The bleeding and purging were repeated, and at night a blister was applied to his neck. On the following morning he was sleeping and feeble, but his answers were rational ; as the frequency and fulness of his pulse increased in the evening, he was again bled. The inflammation of the brain was now subdued, and the patient gradually recovered. The wound healed without any exfoliation of bone, and when he was discharged from the hospital there was not the most trivial circumstance which could induce us to suspect that the brain had sustained any injury from the accident. His sleep was sound and undisturbed, and the sudden motion of his head in any direction occasioned no giddiness or inconvenience.

It appears very clearly, I think, from these cases, as well as from a great number of others to be found in books, that a slight degree of pressure does not derange the functions of the brain, for a limited time after its application. That it does not do so at first is very obvious ; as persons are often perfectly sensible, and free from headach and giddiness immediately after the injury. Whether it may not produce such an effect at some remote period, is not so easily determined, since this cannot be ascertained but by a continued acquaintance with the persons who had received the injuries. All, however, whom I have had an opportunity of knowing for any length of time after the accident, continued as well as if nothing of the kind had ever happened to them. In Mr. Hill's Cases in Surgery, two instances of this sort are related ; and Mr. Hill knew both the patients for many years afterwards, yet did not perceive any inconvenience to arise. It deserves to be mentioned, too, that one of the patients was a sailor, and, therefore, probably led a life of irregularity as well as of exertion. The result of cases of this kind, which I have met with in authors, does not lead to the apprehension of any future mischief ; nor is it easy to conceive that the pressure, which caused no ill effects at a time when the contents of the cranium filled its cavity completely, should afterwards prove injurious when they have adapted themselves to its altered size and shape. Severe illness, indeed, does often intervene between the receipt of the injury and the time of its recovery ; and many surgeons might be inclined to attribute this to pressure ; but it equally occurs where the depressed portion is elevated ; several instances of which I shall have occasion to relate, and many others are to be met with in authors. This is a circum-



stance which nothing but very extensive experience can show in a true light. If, for instance, a surgeon who was prepossessed with the opinion that elevation of the bone is necessary, in every instance of depressed cranium, should have acted upon this opinion in the first, third, fourth and fifth cases, and afterwards have employed proper evacuations, his patients might, perhaps, have had no bad symptoms, and he would naturally have attributed their well-doing to the mode of treatment which he had pursued: yet these cases did equally well without an operation. If the same surgeon had been witness to the disturbance which arose in the second, sixth and seventh cases, he would, without doubt, have attributed them to the continuance of pressure made by the bone; yet these cases also did well by medical treatment only: and when the symptoms which come on thus are of the inflammatory kind, they may generally be removed by the same means. Many cases also are to be met with in books, and some are related in the subsequent part of this Essay, where not only great but even fatal mischief ensued, notwithstanding the brain had been relieved from pressure at an early period. Another surgeon, prejudiced against the use of the trephine, might, with equal injustice, consider the mischief, which ensues in certain cases, as entirely owing to the operation.

The degree of pressure which the brain can sustain, without great injury to the system, may probably vary according to the disposition of that organ to be affected by it, the suddenness of its application, and the direction in which it is made; and although it must be very difficult to obtain any precise knowledge on this subject, yet there is great reason to believe that the brain can bear more pressure without injury to it, than was formerly supposed. The first of these circumstances seems evident, for in some persons a slight pressure produces severe symptoms, whilst, in others, a much greater degree is borne without inconvenience. We can rarely judge of the effects of pressure when any part of the cranium is beaten in by a blow; for, in that case, the shock generally occasions stupefaction. Internal hæmorrhages, perhaps, afford us the best criterion whereby to determine the effects of pressure on the brain. The eighth case will serve as an illustration of this remark, where it appears that a considerable hæmorrhage must have taken place before it deprived the patient of his faculties; for he walked home, undressed himself and went to bed, after the trunk of the middle artery of the dura mater had been ruptured. In cases of apoplexy, also, the hæmorrhage is generally very large before it produces those consequences which destroy life.

The authorities quoted by Morgagni, as well as his own observations, show that people may recover from apoplexy even after a considerable effusion of blood has taken place.

Volume IX. page 161, of the London Medical Journal, contains observations on recent depressions of the skull to the same effect. Several cases are reported which were successfully treated, better without than by an operation.

One general principle, says a writer, I would inculcate, which is, "*that injuries of the head, apparently trifling, should never be neglected; and, on the other hand, those which appear most dangerous and alarming should never be despaired of.*"

*Of the Consequence of Injuries to the Brain.*

*Of Fungus and Hernia Cerebri.*—The fungus is simply an exuberant protrusion of granulations beyond the level of the cranium, arising usually from the surface of the dura mater, or from the cut edges of the bone granulating luxuriantly.

Hernia cerebri is a tumour formed by the pressure of blood, which has been extravasated into the substance of the brain, owing to a diseased state of its vessels induced by one of the foregoing causes. The effused fluid, if the skull were entire, would in all probability, induce apoplexy; but when a deficiency of bone exists, so as to allow it to expand, it presses the surface of the brain and its meninges, through the vacant space, and there forms a tumour, which continues to increase in size, until the superficial stratum of brain becomes so distended as to give way; when blood oozes out and forms a coagulum.

*Treatment.*

*Of the Fungus.*—Moderate pressure; the constant application of dry lint; sprinkling the excrescence with pulverized blood root.

*Of the Hernia.*—All pressure should be carefully avoided, and nothing in general need be done but daily to apply simple dressings; when the coagulum may soon drop off, and the tumour waste away.

Ligatures and styptics should be avoided.

Should the hæmorrhage be so great as to threaten danger, the coagulum should be removed, the bleeding vessel exposed, and some diluted vegetable astringent may be applied with success to stop the bleeding.

## CHAPTER V.

### FRACTURES.

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**FRACTURE** is a division of bone into two or more fragments; generally occasioned by external violence.

*Species.*—1. Simple:—where the bone has been divided, and the integuments remain unimpaired.

2. Compound:—where there is a corresponding wound in the soft parts, by which the fractured extremity of the bone becomes exposed.

Again, fractures are divided: 1st. *Transverse*, which are such as take place directly across the bone; 2d. *Oblique*, when they deviate from a perpendicular direction; 3d. *Longitudinal*, when a fracture runs parallel with the axis of the bone, which seldom or never happens; and some add a fourth kind, *Comminutive*, when a bone is broken into several pieces, or crushed into fragments.

Fractures complicated with violent contusion of the soft parts, or with a wound, rendering them *compound*, are much more dangerous than others free from such accidents. The bad symptoms which render compound fractures so dangerous, are of many kinds: hæmorrhage, violent and extensive inflammation of the limb, with extreme pain, delirium and fever; large abscesses, gangrene, &c. Fractures of the leg are generally more serious than similar injuries of the upper extremity. The wound of a large artery may add considerably to the danger of a fracture.

#### *Causes.*

*Predisposing.*—Certain diseases of the bone; as abscess, friability or white swelling, &c.

*Exciting.*—External violence.

#### *Symptoms.*

Some of the symptoms of fractures are equivocal. The pain and inability to move the limb, commonly enumerated, may arise from a mere bruise, a dislocation, or other cause. The crepitus or grating; the separation and inequalities of the ends of the fracture, when the bone is superficial; the change in the form of the limb; and the shortening of it; are circumstances communicating the most certain information; and the crepitus, in particular, is the principal symptom to be depended upon, though occasionally attendant on dislocations. The signs of fractures, however, are so exceedingly various, according to the bones which are the subject of injury, that it cannot be said, that there is any one which is invariably present and characteristically confined to them. The writers of systems of surgery usually notice

loss of motion in the injured limb, deformity, swelling, tension, pain, &c., as forming the general diagnosis of fractures. The crepitus, or the grating sensation, or noise occasioned by the ends of a fracture, when they are moved and rubbed against each other, is one of the most positive symptoms of the existence of such an accident.

### *Treatment of Fractures in general.*

In the treatment of fractures in general, there are three indications to be fulfilled.

First, to replace or reduce the fractured or broken bones into their original or natural situation.

Second, to secure and keep them in this situation.

Third, to prevent excessive inflammation and pain.

1st. *Examination of Fractures.*—When called to an accident of this kind, it will be first necessary carefully to examine, and ascertain whether the bone or limb is fractured; and by passing the finger or thumb along the course of the bones, the fracture can generally be felt. There is an unevenness or roughness communicated; a depression; and upon rotating or turning the fractured limb, a grating noise is heard, or a jar felt. Besides, there is an inability to raise or move the limb; and it is usually shorter than the opposite one. Having ascertained the nature of the accident; the next step will be to remove the patient to his residence, or the place where he is permanently to remain; and if he is to be removed to any distance, the bones may be temporarily secured by splints. Having arrived, or been carried to the destined place, preparations must next be made for reduction and dressing. If splints have not already been provided, they should now be made, of a proper width and length, according to the part which requires their application; and they must be properly covered. Next, bandages must be prepared. Muslin will answer, but those made of linen are preferable. They should be made three or four inches wide, and several yards in length, and rolled up for use. Having made the necessary preparations, the patient must be placed on a bed or mattress, and gradual extension and counter extension should be made, provided one bone ride another, or is not already in coaptation. It is quite erroneous to suppose that force, or much extension is necessary in reducing all fractures. In most that I have attended, the end of the bones have been in contact with each other, or nearly so, so that very little force has been necessary to be employed. The physician, or surgeon, should take hold of the lower limb, if the fracture be upon a limb, while an assistant grasps or holds the upper portion of it; and upon slight extension, examination should be made to ascertain whether the fractured bones are in a straight or direct line with each other; and, also, whether the ends of the bones are even, or in no respect depressed one below the other, as these are the distinguishing marks, or the criterion which will enable us to judge whether they are brought properly together, or in coaptation.

“It is true, that when swelling has come on, it is impossible always to decide by the touch, in what degree we have accomplished our object; we are obliged to judge by the relative position of the joints



above and below the fracture, and the general aspect of the limb. I have often desisted from my unavailing efforts to reduce a fractured limb to a right position, the spasms that were excited being so violent as to threaten a protrusion of the bones through the skin, and yet have afterwards found no difficulty in bringing the bones into a very satisfactory position. In many cases, also, it has appeared to me that the coaptation has been affected by the action of the muscles themselves; for when on the subsequent day, I had removed the splint, I have felt so well satisfied with the general position, that I have done nothing more, and each succeeding day found less cause for interference. In these cases, upon the subsidence of the swelling, scarcely any irregularity could be perceived in the outline of the bone."

The bones being properly adjusted, the bandage will be put round the limb, commencing below and rising upwards, or from the inferior extremity, and continuing it to the top, a suitable distance above and below the place of fracture. After covering the limb, let the bandage be still held, and splints, as many as are necessary, be placed around it, to give security, and let these be held by an assistant. The roller must then be continued over the splints, until they are sufficiently compressed to keep the bones in their proper places, or in coaptation. I sometimes fold a piece of linen, a number of times, the width of the splints, to place them upon, in order to prevent too much, or undue pressure. When this has been accomplished, tape or narrow strips of linen may be tied around, in two or three places, to render the dressings and the fractured bones still more secure.

The bandages must not be put on too tight, as the swelling that always follows will excite too much pain, by impeding the circulation. The limb may now be placed upon a pillow, a little flexed or bent, and kept in an easy and quiet position.

A decoction, made by boiling *wormwood* and *hops* in *vinegar*, may be applied to prevent and diminish excessive inflammation; and after this application has been continued awhile, it may be discontinued, and equal parts of *rain water*, *spirits* and *vinegar* be substituted. After the parts have been wet with the liquid, a cloth should be laid over, to prevent too much evaporation.

All that art can do towards the reunion of a fractured bone, is to lay it perfectly straight, in its original situation, and to secure it so; to keep it easy, and moderate excessive inflammation. All tight bandages are injurious. It is in this way that excess of art does mischief. Indeed, fractures may be successfully treated without either the use of splints or bandages. Instead of the roller mentioned, the following bandage may be applied, which, in some respects answers a better purpose. It is made by taking a piece of American muslin, somewhat wider than is sufficient to extend round the limb, and cutting it down each side, to the distance of about half the diameter of it, in strips of about an inch in width, and then applying it similar to the eighteen, or many tailed bandage. This admits of the part being examined without changing the position of the parts; and is more particularly applicable to compound fractures. It is not necessary often, to remove the dressings to examine the fracture, provided we have no just grounds to suppose there is any displace-

ment. It is sufficient to remove them occasionally, or as often as the bandages become loose, from a subsidence of the swelling, or other causes. As a general rule, once a week is sufficient, except we have some doubt on our minds respecting the bones being in contact, or in their proper places. The patient should lay in a horizontal position as much as possible; and should twitchings of the tendons occur, or much pain, an anodyne may be given, and particularly at bedtime.

I have taken from different writers, some remarks upon the treatment of fractures in general, which may either throw some additional light upon the subject, or further illustrate the foregoing treatment. In general, the remarks are judicious, and consonant with my own views.

### *Of the Means for keeping Fractures reduced.*

After the bones have been put into their natural situation, time alone would complete their cure, were there not in the muscles a continual propensity to displace the ends of the fracture again. In cases of fracture the muscles are often affected with involuntary spasmodic action, by which the broken part would certainly be displaced, were no measures taken to maintain the extremities of the broken bone in contact. Besides, the patient, in easing himself, coughing, sneezing, &c., must unavoidably subject the limb to a degree of motion, by which the coaptation would be altogether destroyed. Hence, the necessity of employing means for fixing the broken limb so effectually that it may continue perfectly motionless during the whole time requisite for the union of the fracture. This second indication is sometimes troublesome and difficult, and, as Boyer observes, it is in this part of the treatment that the surgeon has an opportunity of evincing his skill. The means employed for the fulfilment of this indication are, an advantageous position, quietude, bandages, splints, and various kinds of apparatus.

In the treatment of all fractures, the position of the part, and indeed of the whole body, is a thing of material importance. Whenever the case is a fracture of the lower extremities, the patient should lie strictly in bed until the callus is completely formed. It is likewise an advantage not to have the bed much more than a yard wide, because the surgeon and assistants can then more conveniently get at any part of the limb. Feather-beds are a great deal too soft and yielding: a horse-hair mattress is far preferable. Boyer, indeed, is so impressed with the utility of letting the patient lie upon a surface which will not sink, that he recommends two mattresses to be used, and a board to be laid under the upper one from the hip to beyond the patient's foot.—(*Traité des Mal. Chir.* vol. iii. p. 39.)

The most favourable position for a fractured limb is that in which all the muscles passing over the fracture, and extending either to the lower fragment or to that part of the limb which is articulated with it, are equally relaxed. The injured limb should also have firm support at every point, and its position ought to be regulated so that not only this object be carefully fulfilled, but at the same time the chance of

displacement from the action of the muscles, or the weight of the body, or part itself, may be diminished as much as possible.

The natural, or rather the most easy position of the limb, is that which is usually chosen by a person who reposes himself or who is sleeping; for then all motion is suspended, and every part assumes that posture which is most congenial to it. In this condition, the limbs are not extended, nor yet entirely bent; but only in a moderate state of flexion. Hence, Boyer remarks, that a half-bent position of the limbs is that which is most natural, and that in which all the muscles enjoy an equal degree of relaxation, and, consequently, that it is, generally speaking, the best for fractures. This posture, which was recommended by Hippocrates and Galen, has been highly extolled by Pott, who appears to have exaggerated its advantages. Considered in a general way, it is without contradiction preferable to every other position of the limb; but its employment should be liable to exceptions, as will be noticed in treating of particular fractures.— (See *Boyer, Traité des Mal. Chir.* t. viii. p. 40.)

In whatever position a broken limb is placed, (says this writer,) it should bear throughout its whole length equally and perpendicularly upon the surface on which it lies, and not be only partially supported. When, for example, only the extremities of a fractured limb rest upon the bed, the weight of the limb itself will make it bend in the situation of the fracture. The limb will also be rendered crooked, if the broken part be supported, while the extremities of the limb (especially the inferior) sink lower by their own weight. The displacement of the fracture is not the only inconvenience arising from the limb being laid upon a surface where it is not every where equally supported. The parts which do bear on this surface experience a painful degree of pressure, which, if long continued, is apt to produce inflammation, and even sloughing, of the integuments. Thus, in fractures of the leg, gangrene of the heel has sometimes arisen entirely from this cause. Such inconveniences may be prevented by laying a fractured limb on a surface of corresponding form; that is to say, on a surface which is depressed where the limb has projections, and rises where it presents depressions. The surface should not be so hard as to annoy the patient; yet it ought to be sufficiently firm not to yield to the weight of the limb and apparatus. According to Boyer, the best pillows for the support of broken limbs are stuffed with chaff of oats, a substance which he describes as far preferable to feathers, because it more readily admits of being pushed from the place where the limb is prominent to another situation where the member presents a depression or hollow; and it has the advantages of being less heating than feathers and less apt to spoil.

In whatever position fractured limbs are placed, they ought to be kept perfectly quiet during the whole time requisite for the union. If the broken bone be moved while the callus is forming, the surfaces of the fracture rub against each other, and the process is disturbed; and, indeed, sometimes by repeatedly moving the limb, the consolidation of fractures is entirely prevented, or, at least, rendered very slow and difficult.

In order to maintain the limb in the right position, and in a state of

quietude, and to preserve the fragments in proper contact with respect to each other, the surgeon is to caution the patient to avoid moving at all more than can be helped; and every cause likely to subject the limb to any kind of shock or concussion is to be removed. But, in particular, it will be necessary to apply a retentive apparatus, usually consisting of some application to the skin itself, bandages, splints, tapes, straps and buckles, soft pads, &c.—(See *Boyer, Traité des Mal. Chir.* t. iii. p. 42.)

Upon the subject of the dressings, bandages, &c. which ought to be applied to fractures, no surgeon has written better than Mr. Pott.

“The intention (says he) in applying any kind of external medicine to a broken limb is, or ought to be, to repress inflammation, to disperse extravasated blood, to keep the skin lax, moist and perspirable, and at the same time to afford some, though a very small degree of restraint or confinement to the fracture, but not to bind or press; and it should also be calculated as much as possible to prevent itching, an herpetic eruption, or an erysipelatous efflorescence.

“This lies very easy, repels inflammation, is not adherent, comes off clean, and very seldom, if ever, irritates, or causes either herpes or erysipelas. But let the form and composition of the application made to the limb be what it may, one thing is clear, viz., that it should be put on in such manner, as that it may be renewed and shifted as often as may be necessary, without moving the limb in any manner: it being certain, that when once a broken thigh or leg has been properly put to rights, and has been deposited properly on the pillow, it ought not ever to be lifted up or moved from it again without necessity, until the fracture is perfectly united; and it is true that such necessity will not very often occur.”

Such application having been made as the surgeon thinks right, the next thing to be done is to put on a proper bandage. That formerly used was what is commonly called a roller. This was of different lengths, according to the surgeon's choice, or as it was used in the form of one, two or more pieces.

“By such kind of bandage three intentions are aimed at, and said to be accomplished, viz. to confine the fracture, to repress or prevent a flux of humours, and to regulate the callus; (see *Duverney*;) but whoever will reflect seriously on this matter, will soon be convinced, that although some sort of bandage is necessary in every simple fracture, as well for preserving some degree of steadiness to the limb, as for the retention of the applications, yet none nor either of these three ends can be answered merely, or even principally, by bandage of any kind whatever: and, therefore, if this should be found to be true, that is, if it should appear, that whatever kind of deligation be made use of, it cannot be a principal, but only an accessory kind of assistance, and that in a small degree, and very little to be depended upon, it will follow, that such kind of bandage as is most difficult to be applied with justness and exactitude, such as is soonest relaxed and out of order, such as stands most frequently in need of renewal, and in such renewal is most likely to give pain and trouble, must be more improper and less eligible than one which is more easily applied, less



liable to be out of order, and which can be adjusted without moving the limb, &c.

“The best and most useful bandage for a simple fracture of the leg or thigh is what is commonly known by the name of the eighteen-tailed bandage, or rather, one made on the same principle, but with a little difference in the disposition of the pieces. The common method is to make it so that the parts which are to surround the limb make a right angle with that which runs lengthwise under it; instead of which, if they are tacked on so as to make an acute angle, they will fold over each other in an oblique direction, and thereby sit more neatly and more securely, as the parts will thereby have more connexion with, and more dependance on, each other. In compound fractures, as they are called, every body sees and acknowledges the utility of this kind of bandage preferably to the roller, and for very obvious and convincing reasons, but particularly because it does not become necessary to lift up and disturb the limb every time it is dressed, or every time the bandage loosens.

“The pain attending motion in a compound fracture, the circumstance of the wound, and the greater degree of instability of parts thereby produced, are certainly very good reasons for dressing such wound with a bandage which does not render motion necessary; but I should be glad to know what can make it necessary, or right, or eligible, to move a limb in the case of simple fracture? what benefit can be proposed by it? what utility can be drawn from it? When a broken bone has been well set, and the limb well placed, what possible advantage can arise from moving it? Surely none; but, on the contrary, pain and probable mischief. Is it not the one great intention to procure union? Can moving the limb every two or three days contribute to such intention? must it not, on the contrary, obstruct and retard it? Is not perfect quietude as necessary towards the union of the bone in a simple as in a compound fracture? It is true, that in the one there is a wound which requires to be dressed, and the motion of the limb may in general be attended with rather more pain than in the other; but does motion in the simple fracture give ease, or procure more expeditious union?

“Every benefit then which can be supposed to be obtained from the common bandage or roller, is equally attainable from the use of that which I have just mentioned, with one additional, and, to the patient, most invaluable advantage, viz. that of never finding it necessary to have his leg or thigh once, during the cure, removed from the pillow on which it has been properly deposited.”—(*Pott's Remarks on Fractures, &c.*)

In France, a universal preference is given to Scultetus's bandage in every instance where we employ the eighteen-tailed one, from which it chiefly differs in being composed of separate pieces admitting of removal, so that when a part of the bandage is soiled it can be taken away without disturbing the whole of the dressings. The clean pieces are first stitched to those which are about to be removed, and then they are drawn under the part. In cases of compound fracture, where the bandage is soiled with the discharge in a very short time, and must be often removed, certainly Scultetus's bandage is the

best, particularly as it possesses all the recommendations peculiar to that of the eighteen-tailed kind.—(*Boyer, Traité des Mal. Chir.* t. iii. p. 46.)

With respect to the general objects and uses of bandages, in cases of fracture, I ought to notice one design of them, which is strongly inculcated in the modern French schools; namely, that of “benumbing the irritability of the muscles,” by the compression resulting from their regular and even application to the whole of the member.

“The parts of the general apparatus for a simple fracture, which come next in order, (observes Mr. Pott,) are the splints,” which are unquestionably the most efficient of all the applications made to a broken limb with a view of keeping the ends of the fracture steady and in a proper state of contact. Without them the surgeon would in vain endeavour to maintain the reduction.

“Splints,” says Pott, “are generally made of pasteboard, wood, or some resisting kind of stuff, and are ordered to be applied lengthwise on the broken limb; in some cases three, in others four; for the more steady and quiet detention of the fracture.

“That splints, properly made and judiciously applied, are very serviceable, is beyond all doubt; but their utility depends much on their size, and the manner in which they are applied.

“The true and proper use of splints is to preserve steadiness in the whole limb, without compressing the fracture at all. By the former they become very assistant to the curative intention; by the latter they are very capable of causing pain and other inconveniences; at the same time that they cannot, in the nature of things, contribute to the steadiness of the limb.”—(*See Remarks on Fractures and Dislocations, in Pott's Chirurgical Works, vol. i. p. 298, &c. edit. 1808.*)

Assalini strongly disapproves of the employment of all tight bandages, and of covering the whole of a broken limb with splints. He was called to a gentleman of rank at Paris, who had broken the knee-pan transversely. He laid the limb upon a concave splint, the shape of which was adapted to the under surface of a part of the leg and thigh. No bandage was used; merely two leather straps, which crossed upon the knee, and included the fractured bone. A perfect bony union was thus easily effected. Assalini afterward extended the use of a concave splint, applied under the limb, to fractures of the leg and thigh. In the first of these cases, however, only the thigh is received in the hollow splint, and from this, two branches, or lateral splints, go along the leg. The apparatus has also a kind of sole for the support of the foot. As this simple contrivance is fastened with a very few straps, and no plasters or bandages are used, the surgeon has constantly a view of the whole front of the limb, and of the fractured part of it, which Assalini thinks a great advantage. In compound fractures, he puts no other dressings on the wound, but linen compresses, which are kept continually wet with cold water.—(*Manuale di Chirurgia, parte prima, 1812.*)

In oblique fractures of the thigh, and sometimes even in those of the leg, the difficulty of accomplishing, by the ordinary means, a cure free from deformity, and especially without a shortening of the limb, has led to the idea of employing continual extension. This expres-

sion implies the operation of a bandage, or machine, which continually draws the fragments of the broken bone in contrary directions, at the same time that it restrains them from gliding over each other, and maintains them in contact during the whole time necessary for their union. In England, this practice has long been relinquished. It appears to have been chased away by the dazzling theory of relaxing every muscle in such manner as to render it incapable of displacing an oblique fracture; a theory with which the surgeons of this country were but too much blinded, by the persuasive eloquence of the late Mr. Pott. Desault saw at once, however, every inconsistency in the doctrine of the possibility of relaxing the muscles so as to incapacitate entirely the whole set connected with a broken thigh; and he never ceased to inculcate in his school, that in such a case, the assistance of a mechanical apparatus applied to the limb was the main thing by which the shortening of the limb was to be prevented. When we consider the treatment of fractured thighs, we shall find that the principle of continual but moderate extension has had, in France, advocates of great talent and eminence, though it is a method to which many surgeons appear to entertain strong objections.—(Cooper.)

*Means for preventing and removing the unfavourable Symptoms liable to arise from Fractures.*

After having reduced the fracture, applied a suitable apparatus for maintaining the reduction, and put the part in an advantageous position, the practitioner is to attend to the indication in the treatment, viz. the prevention and removal of any unfavourable symptoms.

Costiveness is to be averted by the use of clysters and mild aperient medicines. It must be confessed, that in fractures of the lower extremity, the disturbance of the limb, caused by the patient's being obliged to move himself after having taken a purgative, is seriously objectionable; but perhaps in ail, and certainly in some habits, a neglect to open the bowels soon after the accident, would have still more pernicious consequences. In order, however, to lessen the disturbance, a bed-pan should be carefully introduced under the patient. One great convenience of a fracture bed, the cost of which is moderate, is to enable the patient to void his faeces, without the slightest change of position or disturbance; an object effected by the simple contrivance of a little kind of trap, opening under the bed, out of which a small portion of the mattress admits of being withdrawn, and a tin receptacle is placed, for the reception of what is voided from the bowels and bladder.

When a fracture is well set, the position of the part right, and the bandage and splints neither too tight nor too slack, the less the broken bone is moved, and the less the apparatus and dressings are disturbed, the better. Sometimes, however, the practitioner is obliged to take off the splints, and undo the bandage, in order to ascertain that the ends of the fracture lie in even contact. Were he to leave the splints on the part, ten days, or a fortnight, without ever being sure of this important point, he might find, when too late for alteration, that the fracture was in a state of displacement, and the limb

seriously deformed. Hence, a strong reason for employing the eighteen-tailed bandage, which admits of being opened without disturbing the limb, or even without lifting it from the surface upon which it has been deposited.

In fractures of the lower extremities, particularly of the legs, it sometimes happens, the first two or three nights after the reduction, that the limb is affected with convulsive spasms and cramps, which make the patient start in his sleep, and displace the ends of the bone, which must be again reduced.

When the callus has acquired some firmness, the patient should still keep the part or limb quiet, until the union is perfectly consolidated. And in fractures of the lower extremity, even after the union has proceeded so far that the splints admit of being left off, the patient ought not to venture to get out of bed, or bear upon the limb, till several more days have elapsed.

All fractures, however simple and well treated they may be, are constantly followed by weakness and stiffness of the limb. These unpleasant consequences are the greater, the more violently the limb has been contused, the nearer the fracture is to a joint, and the longer the part has remained motionless and without exercise. The stiffness always affects the inferior joint of the broken bone much more than the superior. For the relief of these effects of fractures, it is customary to employ friction, liniments, emollient relaxing applications, washes, and bathing; but sometimes, notwithstanding such remedies, the membrane does not quickly recover its strength, but continues stiff and weak for a year, or even a longer time. The most effectual plans for the prevention of this state, should therefore be resorted to early. These consist in making the joints nearest the fracture execute slight motions, as soon as the union is sufficiently advanced not to be in danger of interruption from this practice. A great deal of caution, however, is necessary in moving the part, and it is safer for the surgeon to superintend the business himself, than leave it to the patient or others. One of the best proceedings, also, for the hindrance of much weakness and stiffness in the limb, after a fracture, is to discontinue the splints and tight bandages immediately the state of the callus will allow. The manner in which their pressure retards the circulation, and prevents the action of the muscles, is one of the principal causes of the stiffness of the limb; and, consequently, the sooner they can be safely left off, the sooner will the patient regain the free use of the limb.

In France, the chief division of fractures is into *simple* and *complicated*; which last includes, among many varieties, the cases which we name *compound*. We shall here briefly notice a few of the complications, and the particular treatment which they require.

Fractures (says Boyer) are always attended with a certain degree of contusion, which is constantly more severe in cases where the violence has acted directly on the situation of the fracture. But such contusion can only be regarded as a complication of the accident, when it exists in so violent a degree as to demand a different treatment from that which is employed in simple fractures.

In this circumstance, the splints and bandage should be applied ra-



ther slackly, and the latter ought to be wet with some resolvent lotion. The next day, the splints and bandage should be opened; a thing highly necessary to be observed, for where it has been neglected, the limb has been known to mortify, in consequence of the swelling having rendered the bandage too tight.—(*Boyer, Traité des Mal. Chir.* t. iii. p. 63, 64.)

In cases where the contusion is severe, but unattended with a wound of the integuments, the tension and swelling may be so intense, that the cuticle is detached, forming vesicles filled with yellowish serum. These vesicles may deceive an inexperienced surgeon, and lead him to imagine that the limb is threatened, or actually affected with gangrene. They ought to be punctured, and covered with pledgets of simple ointment. Here the practitioner may apply emollient poultices under the apparatus.

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#### SECTION I.

##### *Treatment of Compound Fractures.*

In the treatment of compound fractures we are to be governed by the same general principles as in simple fractures. The wound is to be cleared of all extraneous substances, such as splinters of bone, dirt, &c.; and they should be removed with all possible gentleness, without pain, violence or laceration; for if the parts surrounding the fracture be further injured, inflammation will be the consequence, and prove very injurious. There is no necessity of exciting any additional pain by probing, or any harsh means whatever.

Reduction of, or setting a compound fracture, is the same as in the simple; that is, the intention in both is the same, viz. by means of a proper degree of extension to obtain as apt a position of the ends of the fracture with regard to each other, as the nature of the case will admit, and thereby to produce as perfect and as speedy union as possible. The wound being cleared from any loose pieces of bone, or other substances, the next thing to be done is to apply the dressing. The wound must be treated the same as any other. The edges must be gently brought in contact as nearly as possible, and then two or three strips of adhesive plaster applied to secure them, and thus afford an opportunity to heal without suppuration. Over this lint should be placed, and then the black or healing salve.

“The dressing necessary in a compound fracture is of two kinds, that for the wound, and that for the limb. By the former, we mean to maintain a proper opening for the easy and free discharge of gleet, sloughs, matter, extraneous bodies, or fragments of bone, and this in such a manner, and by such means, as shall give the least possible pain or fatigue, shall neither irritate by its qualities, nor oppress by its quantity, nor by any means contribute to the detention or lodgment of what ought to be discharged. By the latter our aim should be the prevention or removal of inflammation, in order, if the habit be good and all other circumstances fortunate, that the wound may be healed by what surgeons call the first intention, that is without suppuration or

abscess ; or, that not being practicable, that gangrene and mortification, or even very large suppuration, may be prevented, and such a moderate and kindly degree of it established as may best serve the purpose of a cure. The first, therefore, or the dressing for the wound, can consist of nothing better, or indeed so good, as soft lint, laid on so lightly as just to absorb the matter, but neither to distend the wound, nor be the smallest impediment or obstruction to the discharge. This lint should be kept clear of the edges, and the whole of it should be covered with a pledget, spread with a soft, easy ointment. The times of dressing must be determined by the nature of the case ; if the discharge be small or moderate, once in twenty-four hours will be sufficient ; but if it be large, more frequent dressing will be necessary, as well to prevent offence as to remedy the inconveniences arising from a great discharge of an irritating sharp sanies.

“ When from neglect, from length of time passed without assistance, from misconduct or drunkenness in the patient, from awkwardness and unhandiness in the assistants, or from any other cause, a tension has taken possession of the limb, and it is become tumid, swollen and painful, a warm poultice is the most proper application that can be made ; immediate union is impossible, and every thing which can tend towards relaxing the tense, swollen and irritable state of the parts concerned, must necessarily be right. But when the parts are not in this state, the intention seems to be very different. To relax swollen parts, and to appease pain and irritation by such relaxation, is one thing ; to prevent inflammatory defluxion and tumefaction is certainly another ; and they ought to be aimed at by very different means. In the former, a large suppuration is a necessary circumstance of relief, and the great means of cure ; in the latter it is not, and a very moderate degree of it is all that is required. The poultice, therefore, although it be the best application that can be made use of in the one case, is not so proper in the other, as applications of a more discutient kind, such as mixtures of spirit, vinegar and water, with fomentations, and medicines of this class. By these, inflammation may sometimes be kept off, and a cure accomplished, without large collections or discharges of matter.

“ Compound fractures in general require to be dressed every day ; and the wounded parts not admitting the smallest degree of motion without great pain, perfect quietude becomes as necessary as frequent dressing.”

If the common bandage or roller is used, care must be taken, in covering the limb, to leave a space sufficiently large, over the wound, conveniently to dress it. In compound fractures, however, it is best to apply such a bandage as prevents the necessity of changing the position of the limb when it is dressed or unbandaged.

A piece of linen, sufficient exactly to go round and fit the leg, may first be applied, and every part covered except the wound. On this the necessary splints should be placed, underneath being compresses to prevent too much pressure. The splints may be secured by the same kind of bandage as is spoken of under the head of simple fractures, or the whole of the splints or dressings (the wound excepted) may be entirely covered by narrow strips of linen, placed adjoining, or in

contact with, or overlap each other, and tied sufficiently tight, but not so as to render the patient uncomfortable. The eighteen or many tailed bandage also answers a very good purpose.

The points to be aimed at are, the even position of the broken parts of the bone, and such disposition of the muscles surrounding them, as is most suitable to their wounded, lacerated state, as shall be least likely to irritate them, by keeping them on the stretch, or to produce high inflammation, and at best large suppuration.

These cases, require at first the most rigid observance of the refrigerant regimen; pain is to be appeased, and rest obtained, by anodynes; inflammation is to be prevented or removed by fomentations of *tansy* and *hops*, and aperient medicines. And during the first state or stages, the treatment of the limb must be calculated either for the prevention of inflammatory tumefaction by discutients; or, such tumour and tension having already taken possession of the limb, warm fomentation, and relaxing and emollient medicines, are required.

If these, according to the particular exigence of the case, prove successful, the consequence is, either a quiet easy wound, which either heals by the first intention or suppurates very moderately, and gives little or no trouble, or a wound attended at first with considerable inflammation, and that producing large suppuration, with great discharge and troublesome formation and lodgement of matter. If, on the other hand, our attempts do not succeed, the consequence may be gangrene and mortification.

These are the three general events or terminations of a compound fracture, and according to these must our conduct be regulated.

In the first instance, there is nothing to do but to avoid doing mischief, either by dressing or by disturbing the limb. Nature, let alone, will accomplish her own purpose; and art has little more to do than to preserve the due position of the limb, and to take care that the dressing applied to the wound proves no impediment.

In the second stage, that of formation and lodgement of matter, in consequence of large suppuration, all a physician's judgment will sometimes be required in the treatment both of the patient and his injured limb.

Every body who is acquainted with surgery knows (says Pott) that, in the case of bad compound fracture, attended with large suppuration, it sometimes happens, even under the best and most judicious treatment, that the discharge becomes too great for the patient to sustain; and that, after all the fatigue, pain and discipline which he has undergone, it becomes necessary to compound for life by the loss of the limb.\* This, I say, does sometimes happen, under the best and most rational treatment; but I am convinced that it also is now and then the consequence of pursuing the reducing, the antiphlogistic, or cooling, and the relaxing plan too far. I would therefore take the liberty seriously to advise the young practitioner to attend diligently to his patient's pulse and general state, as well as to that of his fractured limb and wound; and when he finds all febrile com-

\* When symptoms of gangrene appear, the yest poultice may be applied.

plaint at an end, and all inflammatory tumour and hardness gone, and his patient rather languid than feverish, that his pulse is rather weak and low than hard and full, that his appetite begins to fail, and that he is inclined to sweat or purge without assignable cause, and this in consequence of a large discharge of matter from a limb which has suffered great inflammation, but which is now become rather soft and flabby than hard and tumid; that he will, in such circumstances, set about the support of his patient, and the strengthening of the diseased limb, *totis viribus*; in which I am from experience satisfied he may often be successful, where it may not be generally expected that he would.

The time necessary for the reunion of a bone is somewhat uncertain; it depends upon many circumstances, such as age, habits of the patient, treatment, &c. In young, the bone unites much sooner than in old subjects; as soon, sometimes, as ten days. It may be said, however, in general, that from twenty to sixty days are required for bones to unite. A callus, or hard substance, forms in and around the fracture, which becomes more difficult to break than other parts of the bone.

A short time after a bone is broken, osseous matter is deposited by the vessels, which forms a callus, and unites it. This shows a wonderful provision of nature, to cure such accidents; and so powerful and effectual is this principle, that it proves effectual under the most disadvantageous circumstances. A bone will unite even without bandages, splints, or any other application, either internal or external, and that too when it is subject to a considerable degree of motion.

I lately had an opportunity of seeing this proved, or exemplified, in a case of a dog, which broke its leg. I daily saw it opposite my office, and thought of applying splints and bandages, but neglected it from some cause. The poor animal kept constantly in motion, and the limb, also, with more or less pressure upon the ground. After a short time, the bone united, and the dog walked as well as ever; leaving, however, the limb a little crooked, or deformed.

A cow also broke its leg; and, as an experiment, it was set, and bark taken from a tree and applied to the fractured limb, and firmly bound on. It united very handsomely, and the cow was as useful as formerly. A fact of practical importance should be drawn from this: instead of killing valuable animals when a bone is broken, they may be in this manner saved, and rendered as valuable as ever.

When the requisite time for a broken bone to become firmly united has elapsed, it is proper to examine carefully and cautiously the place of the fracture, in order to learn whether the callus has acquired a suitable degree of strength. If the bone should be found to bend in the least at the injured part, the callus is not sufficiently strong, and the limb should be immediately put up in the apparatus again, with a view of preventing a new fracture, or, at all events, deformity.

For the same reason, the patient should not be allowed to make use of his limb as soon as the fracture has united. In fractures of the lower extremity, he ought to use crutches, and only let the weight of the trunk by degrees bear upon the injured limb. From neglect of this precaution the callus has been known to be absorbed, the limb to



be shortened, and the patient become a cripple. An accidental slip may also produce the fracture again; for the callus, so far from being firmer than the rest of the bone, is at first considerably weaker.

I have often been astonished to see the treatment practised by different persons in cases of fracture. There is no uniformity among them, and the majority appear to be governed by no principles whatever. One practitioner extends and binds down a limb in the most absurd manner, and thus tortures his patient; while another uses *Desault's* long splint, which is another species of torture. Another confines the limb in a box, with little or no other treatment. A physician in New-Jersey practised this method till the wound suppurated, and became filled with maggots or worms; and it is proverbial, that in some hospitals in Europe, patients with fractures are sure to come out cripples.

A case of this kind of treatment occurred in this city, a few years ago, the circumstances of which I will briefly relate. A physician, of this city, was upset in his gig, and his leg became so entangled as to fracture the *tibia* and *fibula* just above the ankle. It was a compound fracture. Two or three physicians were called, who examined it, one of whom, a noted hospital surgeon, proceeded, after the patient was taken home, to treat it, I cannot say to reduce or dress it, as this he did not attempt to do. He left him in the same situation in which he was placed in the house where he was first taken after the accident. A wide splint each side of his leg had there been temporarily applied, and these were continued without any attempt to reduce the fracture; nor did this surgeon scarcely attempt to give it a superficial examination. It appears that he adopted a new fashion, which has lately been introduced into some parts of this country, for the treatment of fractures, viz. to do nothing, at least, under ten days, and then to put on an apparatus to make gradual and permanent extension. This patient not being mine, or not having been called to him in the capacity of a physician, I had no right to interfere; besides, the attending surgeon manifested much jealousy and hostility at my presence. I, however, took the liberty, in the presence of the bystanders, and two or three of the physicians, to show the true nature of the accident, and thus expose the man's ignorance. I placed one finger upon the upper portion of the fractured or broken bone, and one upon the lower, and then pointed out the wide separation there was betwixt them, or the great distance they were apart; and, strange as it may appear, this man was left in this condition for a length of time, and it was by mere accident that he discovered that the fracture had never been reduced. This, the physician or patient afterwards communicated to me himself; and stated that he had found it necessary to make an incision in the wound, to let out the pus or matter which had collected.

Now, is it not passing strange, that some of our most noted surgeons are guilty of such mal-practice? From many accounts that I have heard, of a similar kind, I am confident, that there is no branch of surgery so badly managed as fractures.

I witnessed a case in New-Jersey, many years ago, where a person received a compound fracture of the femur, or thigh bone, which proved fatal for the want of proper treatment.

The surgeon had received the first medical education in Philadelphia, and he seemed to possess sufficient knowledge to reduce the fracture; but being unable to subdue the inflammation, the person died.

There is no branch of surgery that is more simple or more easy to treat than fractures or dislocations. I have had my share of such practice in them, and I should really feel mortified and ashamed, if a single case that I ever treated could be exhibited, in which there was any deformity or bad management.

I have never yet attended one, no matter what bone of the system has been fractured, but that has been properly set, secured, and successfully treated. No lameness, deformity, or inequality in the bones remaining, nor the least mark or symptom, that could ever lead a person to suspect there had ever been a fracture; and this has been accomplished by the simple treatment here laid down, and which, every person, I was about to say, possessed of common sense, can easily put in practice. I have omitted to state that, as soon as the swelling and inflammation have subsided, the tincture of *capsicum* should be applied to the parts, and in a short time after an adhesive or strengthening plaster. Much benefit is invariably produced by these applications.

### *Particular Fractures.*

I have thus given the general rules by which we are to be governed in the treatment of fractures in general; and if they are kept in view, they are sufficient to enable us scientifically and successfully, to treat particular fractures, or every species or variety of them. I shall, however, briefly notice fractures occurring in various parts of the body, in order, if possible, to throw more light upon the subject, or still further to illustrate it.

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#### SECTION II.

##### *Fracture of the Nose, or Ossa Nasi.*

These bones, from their situation, are much exposed to fractures. The fragments are sometimes not deranged; but most frequently they are depressed. In order to replace them, the surgeon must pass a female catheter, a ring-handled forceps, or any such instrument, into the nostrils, and, using it as a lever, push the fragments outwards; while, with the index finger of the left hand, he prevents them from being pushed out too far.

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#### SECTION III.

##### *Fractures of the Lower Jaw.*

This bone is sometimes fractured near the chin; but seldom so as to produce a division of the symphysis. In other instances, the fracture occurs near the angles of the jaw, that is to say, between the

insertion of the masseter and the root of the coronoid process. The bone may also be broken in two places at the same time; in which event, the middle portion is extremely difficult to keep right, because many of the muscles which draw the lower jaw downwards are attached to that part.

The condyles and coronoid processes are also sometimes broken; the former the most frequently.

Fractures of the lower jaw may be either perpendicular to its basis, oblique or longitudinal. Of the latter, examples have been known, in which a portion of the alveolar process, with the teeth in it, was detached from the rest of the bone.

The soft parts are generally contused and wounded.

### *Treatment.*

The fracture, or broken bone, should be raised, and its end brought in contact with the other; after which a compress is to be laid over it, and on this, a piece of pasteboard, previously wet, the better to adapt it to the shape of the jaw; and when this has been applied, the whole is to be secured by a proper bandage. The patient must be directed to keep still, and to talk none. The nourishment must be liquids.

I attended, some time ago, a very bad fracture of the jaw, which occurred in a female, in consequence of a blow from a ruffian, and which did remarkably well by this treatment.

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## SECTION IV.

### *Fracture of the Clavicle, or Collar Bone.*

The clavicle is perhaps as often broken as any bone of the body. Its exposed situation at the upper part of the trunk, its long slender shape, and its being covered only by the common integuments, expose it to frequent accidents.

The fracture commonly occurs near the middle of the bone, as it is here most prominent; it is also occasionally broken near the sternal and humeral extremities. When fractured by the falling upon it of a heavy body, the nerves of the arm become paralyzed by the contusion. In general, the fragments are displaced, unless it is broken near the shoulder, in which case its firm connexion by ligaments with the scapula prevent the displacement. The external fragment, or that nearest the shoulder, is drawn downwards by the weight of the arm, and the action of those fibres of the deltoid muscle, which are inserted into it, and also by the pectoralis major, which, when it is depressed, draws it forwards or inwards towards the sternum, so that the sternal portion is always found riding over the humeral; the arm of the affected side falls upon the breast, and the patient is unable to rotate the humerus, so that it is impossible for him to raise his hand upon his head. He leans to the fractured side; and the altitude is so remarkable, that the celebrated Desault, it is said, was never deceived in deciding, from this circumstance alone, the existence of the fracture.

Crepitation, or a grating sensation, may easily be produced by moving the arm ; and the finger passed over the clavicle readily detects the place of fracture.

This accident in itself is not dangerous, but becomes so when accompanied with great contusion or laceration of the neighbouring soft parts.

The treatment of this fracture has been the source of much difficulty among surgeons ; a vast variety of machinery has been contrived for keeping the fragments together ; and a surgeon of great celebrity, Mr. Pelletan, surgeon in chief to the *Hôtel Dieu*, has renounced all applications, and trusts to rest in a horizontal posture as the only remedy.

#### *Treatment.*

The treatment for this accident, pursued both in Europe and America, seems to me to be really useless, injurious, absurd, and even ridiculous. The very appearance of a person who has been bandaged up, according to the popular practice, is sufficient to convince any reasonable person that it must be productive of bad consequences. The poor patient is obliged to submit to be enveloped in so much bandage, and that of such a tight and oppressive nature, that it is worse to him than the injury. The objections to it must certainly be apparent to every one. When applied in the most skilful manner, it is inadequate to fulfil the necessary indications. Its complexity, its liability to be deranged, and the pressure it makes upon the breast and other parts, impeding respiration, &c., are exceedingly objectionable. Indeed, it is much better to do nothing at all with this fracture, than to apply the ordinary dressings.

The treatment of it is exceedingly simple and easy. First, make a cushion of hair, woollen or cotton, long enough to extend from the axilla, or the arm-pit, nearly to the elbow ; about three inches thick, and of a suitable width. A narrow bandage which may be folded and stuffed with cotton to prevent irritation, must be attached or fastened to the corners of the base, which are placed upwards. They must cross the back and breast, and over the shoulder of the opposite arm ; they are to be tied on the back, or in front, and it may be further secured, and kept under the axilla by additional strips of linen passed over the acromion process and tied, and if necessary others may be tied around the arm and fastened to the cushion. In applying this cushion or compress, or dressing this fracture, there is no necessity for using much force, extension, or thrusting the shoulder backwards. It is sufficient gently to elevate the upper arm and shoulder, then place underneath and as far up into the axilla, or arm-pit, the cushion ; after which let it be secured as directed above. This being done, spread a piece of the sticking salve, or plaster, on a stiff piece of leather, and let it be applied directly over the fracture. This has a considerable tendency to prevent any displacement of the bones. After it has been thus dressed, let a silk handkerchief be placed around the neck, the arm be placed in it, and kept across the abdomen, and in this condition worn until the bone is united ; in every other respect to be treated the same as other fractures. The patient should keep



very quiet. This course of treatment will be found invariably successful, without that inconvenience and torture which accompanies the common practice.

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SECTION V.

*Fractures of the Sternum.*

The sternum, or breast bone, is not frequently broken, and the reason of this fact is imputed to the position of this bone, resting, as it were, upon the cartilages of the ribs, and also in some measure to spongy texture. When the accident does occur, it is from the direct application of external violence to the injured part; and hence the fracture is always accompanied with great contusion, or even a wound of the integuments, and more or less injury of the chest. As Boyer remarks, the sternum, in consequence of the elasticity of the cartilages of the ribs, may be readily propelled backwards by pressure in this direction; and the result is an actual change in the form, and a real diminution of the chest. Now, since this cavity is always accurately filled by its contents, these alterations cannot happen in a considerable and sudden manner, without a risk of the thoracic viscera being contused, and even ruptured. Thus, when the sternum has been fractured by violent blows on the chest, the heart and lungs have been found severely contused, and sometimes lacerated; and there will always be greater danger of such mischief, when the fracture is attended with depression of one or more of the fragments. In some cases, a large quantity of blood is effused in the cellular membrane of the anterior mediastinum; and, in others, the accident is followed by inflammation and suppuration in the same situation, and necrosis of the broken part of the bone. Since the lungs are also liable to be ruptured by the same force which causes the fracture, or wounded by the depressed pieces of bone, emphysema, or collection of matter, may become another complication, as we see exemplified in a case related by Flajani.—(*Collezione d'Osservaz, &c. di Chir.* t. iii. p. 214, 8vo. Roma, 1802.)

A fracture of the sternum is rendered obvious by the inequalities perceptible when the surface of the bone is examined with the fingers; by a depression or elevation of the broken pieces; a crepitus, and an unusual moveableness of the injured part in respiration. In many cases, the fracture may be seen, the soft parts being torn or otherwise wounded. The breathing is difficult, and mostly accompanied with cough, spitting of blood, palpitations, and inability to lie on the back. According to the observations of Petit and Baldinger, several of these latter symptoms may continue, with less intensity, a long while after the fracture is cured.—(*Laveillé, Nouvelle Doctrine Chir.* t. ii. p. 243.)

Fractures of the sternum, when mere solutions of continuity, only require common treatment, viz. a piece of plaster to the situation of

the injury, a roller round the chest, quietude, and a low regimen, with a view of preventing what may be considered as the most dangerous consequence, inflammation of the parts within the chest.

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SECTION VI.

*Fractures of the Ribs.*

These generally happen near the greatest convexity of the bones, several of which are often broken together. The first rib, being protected by the clavicle, and the lower ribs, being very flexible, are less liable to be fractured than the middle ones.

When the spicula of a fractured rib is beaten inwards, it may lacerate the pleura, wound the lungs, and cause the dangerous train of symptoms.

A pointed extremity of the rib, projecting inwards, may also cause an extravasation of blood; or by its irritation produce inflammation in the chest. A fracture which is not at all displaced is very difficult to detect, particularly in fat subjects; and, no doubt, is very frequently never discovered. The surgeon should place his hand on the part where the patient seems to experience a pricking pain in the motions of respiration, or where the violence has been applied. The patient should then be requested to cough, in which action the ribs must necessarily undergo a sudden motion, by which a crepitus will often be rendered perceptible. All the best practitioners, however, are in the habit of adopting the same treatment, when there is reason to suspect a rib to be fractured, as if this were actually known to be the case by the occurrence of a crepitus, or the projection of one end of the fracture; which, indeed, in the instances which are displaced, makes the nature of the accident sufficiently plain.

A broken rib cannot be displaced either in the direction of the diameter of the bone, or in that of its length. The ribs, being fixed posteriorly to the spine, and anteriorly to the sternum, cannot become shortened. Nor can one of the broken pieces become higher or lower than the other, because the same muscles are attached to both fragments, and keep them at an equal distance from the neighbouring ribs. The only possible displacement is either outwards or inwards.

Simple fractures of the ribs, free from urgent symptoms, require very simple treatment. The grand object is to keep the broken bones as motionless as possible. For this purpose, after a piece of plaster has been applied to the side, and over it proper compresses, a broad linen roller is to be firmly put round the chest, so as to impede the motion of the ribs, and compel the patient to perform respiration chiefly by the descent and elevation of the diaphragm. A scapulary will prevent the bandage from slipping downwards. When the fractured part is depressed inwards, the compresses should be placed on the anterior and posterior part of the bone. As a roller is apt to become slack, many surgeons, with good reason, prefer a piece of strong linen, large enough to surround the chest, and laced so as to compress the ribs in the due degree.—(*Boyer.*)

## SECTION VII.

*Fractures of the Thigh.*

A fracture of the thigh bone, or os femoris, is liable to take place at every point, from its condyles to its very head; but it is at the middle third of this extent, that fractures mostly occur. The fracture is sometimes transverse, but more frequently oblique. According to the common method, the latter direction of the injury makes a serious difference in the difficulty of curing the case without future deformity or lameness. Sometimes the fracture is comminuted, the bone being broken in more places than one; and sometimes the case is attended with a wound, communicating with the fracture, and making it what is termed *compound*. As Petit remarks, however, the thigh-bone is less seldom broken into several pieces than other bones more superficially situated.

A fractured thigh is attended with the following symptoms: a local acute pain at the instant of the accident; a sudden inability to move the limb; a preternatural mobility of one portion of the bone; sometimes a very distinct crepitus, when the two ends of the fracture are pressed against each other; deformity in regard to the length, thickness, and direction of the limb. The latter change, viz. the deformity, ought to be accurately understood; for, having a continual tendency to recur, especially in oblique fractures, our chief trouble in the treatment is to prevent it.

As now treated, almost all fractures of the thigh are attended with deformity. When this is considered in relation to length, it appears that, in oblique fractures, the broken limb is always shorter than the opposite one; a circumstance denoting that the ends of the fracture ride over each other. We may also easily convince ourselves, by examination, that the deformity is owing to the lower end of the fracture having ascended above the upper one, which remains stationary.

Besides the action of muscles, there is another cause of displacement. However firm the bed may be on which the patient is laid, the buttocks, more prominent than the rest of the body, soon form a depression in the bedding, and thence follows an inclination in the plane on which the trunk lies, which, gliding from above downwards, pushes before it the upper end of the fracture, and makes it ride over the lower one. The muscles, irritated by the points of bone, increase their contraction, and draw upwards the lower part of the bone: and from this double motion of the two ends of the fracture in opposite directions, their riding over each other results.

Transverse fractures are less liable to be displaced in the longitudinal direction of the bone, because, when once in contact, the ends of the fracture form a mutual resistance to each other; the lower end, drawn upwards by the muscles, meets with resistance from the upper one, which, being itself inclined downwards by the weight of the trunk, pushes the former before it, and thus both retain their position in relation to each other.

The deformity of a fractured thigh, in the transverse direction, always accompanies that which is longitudinal; but sometimes it





No. 10.



Figure 1 represents the double inclined concave plane, or splint.  
Figure 2 represents the same, with a stiff joint.  
Figure 3 represents the concave angular splint, for a fracture of the humerus, or upper arm.

exists alone. This is the case, when, in a transverse fracture, the two ends of the bone lose their contact; one being carried outwards, the other inwards; or, one remaining in its place, while the other is separated. The upper end of the fracture is not now, as in the foregoing instance, motionless in regard to the muscular action.—[*Desault.*] But when treated according to the principles or directions we lay down, no such deformity will exist.

Various have been the contrivances, such as very long splints, to secure, in its original situation, the thigh-bone, in cases of fracture; but I have never seen any that has been, in all respects, well adapted to the nature and state of this accident. Some are useless, others injurious, and the best, which is probably Amesbury's, is so expensive, that it is in the reach of but few. Besides, it is too complicated. None will answer for general use, except such as are cheap, simple, and of easy application; and such an *apparatus*, combining all these advantages, I now have the pleasure to describe. After studying a length of time to invent something which would answer the purpose, I finally succeeded in making one, which I have found, by experience, to be superior to any other which I have ever seen, the figure of which is here annexed; and when we reflect upon the peculiar or critical nature of this accident, the acknowledged deformity which attends the ordinary treatment, I think I may pronounce the invention (simple as it is) very valuable. The representation given of it, will enable a person to form a pretty correct idea of its mechanism, and also the mode of applying it. It may be made by hollowing out two pieces of pine or white wood, of suitable width and length, sufficiently to receive the thigh and the lower extremity, or a suitable portion of it. The upper part, as a matter of course, should be made wider, and deeper than the lower, to suit the shape of the limb; and it should be made smooth, thin and rounded externally, to correspond with the shape of the limb. It should be fastened in the middle by a hinge. A small piece should extend from the upper to the lower portion, and also be fastened by a hinge above, and so secured to the lower portion, that it may be properly graduated, or slide higher or lower at pleasure, (as represented in the plate,) in order to form any desirable angle or obliquity. In some cases, it may be necessary to make the upper piece larger, in order to embrace a portion of the pelvis. It may now either be lined with buckskin or not, this being a matter of very little moment, except it were to fasten buckles or straps to it, and to give it a better appearance. Or, what will answer the purpose as well, and which I have always used, is one made in the same manner, except there is a stiff joint, or a joint that admits of no motion. After the two pieces are excavated, or hollowed out, and made very light, they may be both nailed and glued together. Such an angle, however, must be formed, as will keep the limb, when placed in it, considerably flexed or bent. This may be made, in cases of emergency, in half an hour; but it is always best to keep one or more on hand, or ready made. A crooked limb of a tree is an excellent article for making this apparatus in the most simple, cheap and secure manner; or one may be made of tin, or binder's pasteboard, and which, on some accounts, may be preferred by many.

While the principle of the apparatus is kept in view, it is of little consequence of what material it is made, or what the peculiar construction may be, provided the right indication be fulfilled.

### *Mode of Application.*

Having ascertained that the femur, or thigh-bone, is fractured in any part of it, no matter whether *transversely* or *obliquely*, it must be reduced the same as a simple fracture, by a little extension and counter-extension; and sometimes none at all is necessary. Let a bandage or roller be passed around, beginning just above the knee, and continuing it upwards to the groin; or, in place of this roller, the other bandage mentioned must be applied, particularly in a compound fracture; after which, let a splint, properly covered with linen or muslin, be placed on the anterior part of the thigh, the length of the bandage, and let one also be placed a little below, on each side of it, leaving sufficient room for the apparatus. Then let the roller (if this be used) be continued over the splints, the same as in other fractures; afterwards, let the whole leg be carefully placed in this apparatus. Narrow strips are next to be tied around the whole, above and below the knee, in order properly to secure it. An easy bed is now formed for the limb, and such is the convenience and adaptation of the contrivance to the leg, that the patient almost forgets that he has met with the accident. He can change his position, and the position of the leg, without the least danger of displacing the broken bones. He can be removed to any place, if necessary, without injury or inconvenience. He can sit up in the bed, or on a chair, take medicine, or safely submit to considerable motion. The limb reposes in its concavity with perfect ease and perfect support; and I have found this fracture apparatus to be remarkably successful in every instance. The bones speedily unite, there is no deformity attending the accident, and I am persuaded that no one who has ever applied it once can fail of recommending it, or entertaining a high opinion of its utility. Refrigerant or cooling applications can be applied the same as in other fractures. It may also be successfully applied in compound fractures, due care being taken to leave an opening over the wound.

After the apparatus has been applied, the knee should be turned a little outwards, and should rest upon a pillow; which posture, I find, is the most easy and natural. I could here relate cases of its successful application in this species of fracture, but the limits of this work will not permit; and I must therefore leave it for those who are disposed to make trial of it, which is the best method of testing its merits.

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### SECTION VIII.

#### *Fracture of the Femur, or Thigh-bone, within the Capsular Ligament.*

As this is a subject which has of late years excited considerable discussion, the reader cannot be too particular in noticing, that three distinct kinds of fracture, very different in their nature, treatment



No 12.

Representation of the double inclined concave Plane, or Spint, for 'Fractures of the Femur, or 'Fligh Bone'





and result, have been generally confounded together, under the name of "fractures of the neck of the thigh-bone;" for much of the dispute that has prevailed, whether these fractures will unite like those of other bones, seems to have proceeded from the three species of fracture not having been properly discriminated. Two of the cases unite by means of callus, like other fractures; but the other, as it usually occurs, is conceived by some surgeons not to admit of a similar mode of union; or, at all events, they declare that the fact has not yet been demonstrated. Sir Astley Cooper has therefore divided these cases, first, into *fractures which happen through the neck of the bone, entirely within the capsular ligament*; being the examples in which he thinks a union by bone has not yet been proved; secondly, into fractures through the neck of the bone *at its junction with the trochanter major, which fractures are of course external to the capsular ligament*; thirdly, into *fractures through the trochanter major, beyond its junction with the neck of the bone.*—(*On Dislocations, &c.*, p. 114—116.)

Fractures of the neck of the thigh-bone are infinitely more frequent than dislocations at the hip, and may arise from a fall, either upon the great trochanter, the sole of the foot, or the knee. According to Desault, the first accident produces the injury much more frequently than the two latter. Of thirty cases which were seen by Desault, four-and-twenty arose from falls on the side. All those inserted by Sabatier, in his interesting Memoir, were the result of a similar accident. These authors, it is to be remarked, are not speaking particularly of the fracture within the capsular ligament; and hence, perhaps, the reason of their sentiments differing from those of Sir Astley Cooper, who observes, that in London the fracture within the capsule is most commonly produced by a person slipping off the edge of the foot-pavement. According to this surgeon, a fracture of the neck of the thigh-bone, within the capsular ligament, seldom happens but at an advanced period of life; and the reason of the facility with which the injury takes place in old persons, he ascribes to the interstitial absorption which that part of the femur undergoes in individuals past a certain age, whereby it becomes shortened, and altered in its angle with the shaft of the bone. He admits, however, that the accident is frequently caused by a fall upon the trochanter major.—(*Surgical Essays*, part 2. p. 35, 36. Also, *Larrey, Journ. Complém.* t. viii. p. 98. 8vo. Paris, 1820.) Fractures of the neck of the thigh-bone within the capsule are more common in women than men.—(*J. Wilson, on the Skeleton, &c.* p. 245. *A. Cooper, on Dislocations, &c.* p. 122.)

The division is more frequently transverse than oblique; the neck being sometimes, in the former case, wedged in the body of the bone, as Desault found in several instances; a model of one of which, in wax, is preserved in the collection of *L'Ecole de Santé*, and the natural specimen of which was in the possession of *Bichat*. A fracture of the neck of the thigh-bone is sometimes complicated with one of the trochanter major.

With respect to the diagnosis of a fracture within the capsular ligament, an acute pain is felt, a sudden inability to walk occurs, and the patient cannot raise himself from the ground. The latter circum-

stance, however, is not invariable. In the fourth volume of the *Mem. de l'Acad. de Chirurgie*, a case is related, in which the patient walked home after the accident, and even got up the next day. Desault published a similar example. The locking of one end of the fracture in the other may offer an explanation of this circumstance. The dissections made by Dr. Colles have recently led to another discovery, viz., that sometimes the solution of continuity does not extend completely through the neck of the femur.—(See *Dublin Hospital Reports*, vol. ii.) Three cases proving this fact are there adduced; a fact which at once explains the ability of some patients to walk directly after the injury, and the absence of all retraction of the limb. According to Mr. Amesbury, incomplete oblique fractures of the neck of the femur are easily produced in the recently dead subject.—(*On Fractures of the Upper Third of the Thigh-bone*, p. 3.)

A shortening of the limb almost always takes place: the “leg becomes from one to two inches shorter than the other; for the connexion of the trochanter major with the head of the bone, by means of the cervix, being destroyed by the fracture, the trochanter is drawn up by the muscles as high as the ligament will permit, and consequently rests upon the edge of the acetabulum, and upon the ileum above it.”—(*Sir A. Cooper, on Dislocations, &c.* p. 117.) The action of the muscles drawing upwards the lower end of the fracture, the weight of the trunk in propelling downwards the pelvis and upper end of the fracture, are the two causes of the shortening of the limb. In general, a slight effort suffices for the restoration of the natural length of the limb; but the shortness recurs almost as soon as the extension ceases. “This evidence of the nature of the accident continues,” as Sir A. Cooper correctly remarks, “until the muscles acquire a fixed contraction, which enables them to resist any extension which is not of the most powerful kind.”—(*Surgical Essays*, part 2. p. 31.) Goursault and Sabatier remark, that sometimes the shortening of the member does not take place till a long while after the accident. In opposition to the common belief that the limb is shortened, Baron Larrey asserts, that the member is at first actually lengthened.—(*Journ. Complém.* t. viii. p. 99.) This statement I have never seen confirmed, and it is contradicted by daily experience. And, to prove how widely Larrey differs from Sir A. Cooper, the following passage will suffice. “In order to form a still more decided judgment of this accident, (says the latter writer,) after the patient has been examined in the recumbent posture, let him be directed to stand by his bedside, supported by an assistant, so as to bear his weight upon the sound limb. Immediately he does this, the surgeon observes most distinctly the shortened state of the injured leg, the toes resting on the ground, but the heel not reaching it, the everted foot and knee, and the diminished prominence of the hip.”—(*Surgical Essays*, part 2. p. 34.) The lessened projection of the trochanter major arises from its not being supported by the neck of the bone, as it always is in the natural state of the parts. A swelling is observable at the upper and front part of the thigh, always proportioned to the retraction of which it appears to be an effect.

The projection of the great trochanter is almost entirely effaced.

Directed upwards and backwards, this eminence becomes approximated to the crista of the os ileum; but, if pushed in the opposite direction, it readily yields; and, when it has arrived at its natural level, the patient becomes capable of moving his thigh.

The knee is a little bent. Abduction of the limb always occasions acute pain; and it is noticed by Sir A. Cooper, that the rotation inwards is particularly painful, because the broken extremity of the bone then rubs against the capsular ligament.—(*Vol. cit. p. 33.*) If, while the hand is placed on the great trochanter, the limb is rotated on its axis, this bony projection may be felt revolving on itself, as on a pivot, instead of describing, as in the natural state, the segment of a circle, of which the neck of the femur is the radius. This symptom, which was particularly noticed by Desault, is very manifest when the fracture is situated at the base of the neck; less so when at its middle; and it is not very perceptible when the breach is near the head of the bone. In the rotatory motions, the lower fragment rubbing against the upper one produces a distant crepitus, which, however, is not an invariable symptom, as Larrey would lead one to suppose. In fact, as Sir A. Cooper has explained, it is not discoverable while the patient is lying upon his back with the limb shortened; but if the leg be drawn down, so as to bring the limbs to the same length, and rotation be then performed, especially inwards, the crepitus is sometimes observed, in consequence of the broken ends of the bone being thus brought into contact.—(*On Dislocations, &c. p. 121.*)

It appears to Mr. Amesbury, that the head of the bone moves so readily in the acetabulum, “that the least impetus, even through the periosteum and reflected membrane, (supposing them to be entire,) will cause it to move simultaneously with the shaft; and if it should do so in the same relative proportion, crepitus cannot be felt. If crepitus be not elicited by bending the limb upon the pelvis, the surgeon may try to produce it by causing the limb to be *gently rotated*, while he endeavours to fix the head of the bone, by pressing it with his fingers back against the acetabulum.”—(*On Fractures of the Upper Third of the Thigh-bone, p. 15.*)

The toes are usually turned outwards, a position which Sabatier considers as the inevitable effect of the fracture; though Paré and Petit noticed that it did not constantly occur. Two cases, adduced by these surgeons, were not credited by M. Louis; but the experience of Desault fully confirmed the possibility of the limb not being always rotated outwards; and, as Sir A. Cooper has remarked, three or four hours generally elapse before the turning of the limb outwards is rendered most obvious.

#### *Treatment.*

I have treated this accident successfully, in the most simple manner, merely by applying fomentations to the hip, to reduce the inflammation, and then applying a *strengthening* or *adhesive plaster* over it, and directing the patient to lie in a recumbent, and the most easy position; and which is by flexing or bending the limb a little, and placing a pillow underneath.

Some time ago, I was called, in consultation with two surgeons, to



an aged woman of this city, who met with this accident in a fall down stairs. We all agreed that it was a fracture of the thigh-bone within the capsular ligament. They both stated that the woman would never again be able to walk; but their opinion proved to be incorrect. The bone gradually united, after pursuing the above treatment, and in two or three months she was able to walk. She called upon me not long since, and I had an opportunity of examining the leg. There was some difference in the length of it; and the foot, when she walked, turned a little outwards, remaining much in the same position as it did when she received the accident.

I saw another case of the kind treated in a different manner, which never united; the person always remained a cripple. I know not, however, but the difference ought to be imputed, in this case, to some peculiarity in the nature of the accident, rather than the kind of treatment.

The instruments recommended for this kind of fracture are of very little, if any, use. I have thought of applying to the limb, in this accident, the *double-inclined, concave* plane or splint, used for fractures of the femur, but I know not that it would be attended with any better effect than the course advised above.

The treatment, then, for a fracture of the thigh-bone within the capsular ligament, consists in *first* applying fomentations to the hip, if there be pain, swelling and inflammation: *second*, in placing the limb as near as possible in its natural or original position, and a little bent or flexed, and placed upon a pillow: *third*, a recumbent position to be continually maintained, on a hair, or any substantial mattress, or bed: *fourth*, using that kind of diet that is the least calculated to excite inflammation: *fifth*, the application of an *adhesive* or *strengthening plaster* over the whole hip, when the inflammation shall have subsided. The patient should lie in this position until he is able to move or use the limb a little. He may, however, be raised up occasionally, to render his situation less irksome. He should begin to use his leg very gradually, and very moderately; and he should not attempt to walk without crutches. As an experiment, I would recommend the same apparatus that I have recommended for ordinary fractures of the femur. The old lady just mentioned derived very great benefit from the use of the tincture of *capsicum*, and the plaster.

I have omitted to mention that the fracture apparatus is equally successful in oblique as in transverse fractures. The nature of it is such that, if the parts are kept properly relaxed, by suitable applications, there is no danger of one bone riding another. The angle or obliquity of the apparatus produces moderate but sufficient permanent extension to prevent this evil. Nor is there any danger of any lateral displacement, as this is prevented by the concavity of the apparatus. Neither twitching of the tendons or accidental shocks will have any untoward effect, but the limb is kept natural and quiet, and nature is left free to bring about the restorative or healing process.

I might also have mentioned, as regards bandages, whether a roller, the eighteen-tailed bandage, or the other mentioned, be used, they all have one common mode of operating; they press the muscles towards the ends of the fracture, so as to make them form a kind of natural

No. 9.

Fracture of the Neck of the Thigh Bone.



*Diagnosis, or Symptoms.*

In a fracture of the Neck of the Thigh Bone, the leg is shorter, knee and foot turned outwards. The fracture within the capsular ligament generally occurs in persons considerably advanced in years. The leg, in this case, is capable of being pulled down to the length of the other, but is immediately drawn back by the action of the muscles.



case, like the apparatus for the fracture, and thus they make lateral resistance against the parts.

I know of no proper name for this contrivance, except it be called the *double inclined concave plane* or *splint*.

Before I invented this instrument, (and I studied and reflected much before I succeeded, as simple as it is,) I treated the fracture of the thigh the same as any other. After reducing it, or bringing the separated bones in contact, I applied the bandage and splints, extending them from the knee as far up as possible; after which the leg was flexed, turned a little outwards, and placed upon a pillow. I succeeded well in this manner. But there is less security against displacement than by the method recommended, besides many other advantages.

## SECTION IX.

*Fracture of the Humerus, or Upper Arm.*

This bone is frequently fractured near its middle; occasionally in other parts. When the fracture is transverse, and about the middle of the bone, no great derangement takes place; the limb preserves its length, and, unless moved, its form. In oblique fracture, the limb is shortened by the action of the muscles, and considerable alteration in its shape is perceived.

*Treatment.*

The patient being seated in a convenient place, in a chair, or on a bed, the arm must be a little separated from the body, and carried somewhat forward; then, by an assistant, let gradual extension and counter-extension be made until the arm is straight, and until it can be perceived by the pressure of the finger that the ends of the bones are in contact, or coaptation; then let a roller be put around it, and two narrow and covered splints on the outside, and at a short distance from each other. These must also be secured by the bandage. After this has been accomplished, let the apparatus, or the *angular and concave splint*, be applied inside of the arm, as represented in the figure or plate on which is exhibited the apparatus for a fracture of the thigh. This splint must be made somewhat similar to the one just mentioned. It may be made of pine, or any other light wood. It should be convex externally, and concave internally, with a stiff joint, forming an angle of ninety degrees or more, or such obliquity as will enable the patient to place his hand in a sling, and keep it directly across the abdomen.

After it has been applied, it must be secured by a narrow bandage, or strips of linen. This simple apparatus (which I have likewise contrived) as effectually secures the bones in their natural situations, as the other apparatus secures the femur or thigh bone.

One may be made of binder's pasteboard, by cutting it of a proper width and length, slitting the edges, in order to bend it or fit it to the



arm ; then wet and apply it ; when dry, it forms a perfect and secure bed for a fractured or dislocated limb.

Since writing the above, I have been called to a fracture of the humerus or upper arm of a child about eighteen months old, produced by a fall from a chair. The bone was broken immediately above the elbow or the condyles, and the fractured bone was nearly driven through the integuments, and was attended with a considerable contusion ; the fore-arm was twisted, and the bones were so widely separated that the elbow joint had every appearance of a dislocation, and the swelling soon became very considerable. I took a piece of pine board, and split it into two small narrow pieces, about an inch wide and half an inch thick. After shaving or cutting them even and smooth, I placed the ends of each together, so as to form a right angle, nearly as represented in the plate, (the angle not being quite so acute,) and then fastened them together by two small nails. After placing it upon the opposite arm, to ascertain the proper length, the ends were cut off, and it was then covered with muslin. This, and one or two splints, and a very narrow roller or bandage, being prepared, the child was placed in the lap of a female, when I took hold of the fore-arm, and directed a student to grasp the upper portion of the humerus. I now held it a few minutes, and made very slight extension ; the bones and parts gradually became approximated, which was known by examination, comparison, &c. With the left hand I held the limb directly over the fracture, and with the right I applied sufficient of the bandage to cover a considerable portion of the upper and lower arm, passing it over the elbow. I then applied a common splint on the posterior part of the upper arm, extending it down to the elbow, and at the same time I placed on a suitable sized compress, the *angular concave splint* on the inner side, each wing or end extending about two thirds the length of the upper and lower bones, and then continued to pass the bandage the whole length of it. The arm was then placed in a sling across the abdomen or belly.

I directed the arm to be kept wet with a decoction of *wormwood* and *hops* boiled in vinegar, and at the same time ordered it to be covered after the application, to prevent too much evaporation of the liquid. At the same time, an anodyne was administered.

The fracture being very bad, contrary to my usual practice, the next day I removed the dressings and examined it, and found the parts natural, the limb straight, bones in coaptation, swelling much diminished, and the dark colour of the flesh measurably gone, and every symptom favourable.

This morning I have visited the child, and so well is it doing, that without examination no one would suspect that the child had met with the accident, and I am confident that not the least deformity will ever succeed the fracture.

I have been thus particular in detailing this case, that the practitioner may understand the minutæ or particulars of the mode of treatment.

## SECTION X.

*Fracture of the Fore-arm and of the Leg.*

These bones are very liable to be fractured, either one bone or both ; and they are detected the same as other fractures, by a grating noise upon rotating the limb, depression or inequalities in the bones, with difficulty or inability of rotation or movement.

The directions laid down under the treatment of fractures in general, are sufficient to enable any one to treat these fractures. Moderate extension and counter-extension must be made, until the bones are brought in a straight line and in contact. The bandage must then be placed around the limb, and narrow compresses, upon which the splints must be placed ; after which, let the whole be secured by a roller or bandage. If it be a fracture of the fore-arm, let it be placed in a sling ; if it be the leg, let it be placed upon a pillow.

Fractures of the wrist, hand and feet, are to be treated on the same general principles.

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In concluding this chapter on fractures, I shall give the remarks of the count *La Salle*.

The count *La Salle*, in one of his papers addressed to the Academy des Arts, at Paris, thus expresses himself in relation to the practice of surgery among the Indians. The paper is dated August 10, 1565.

“In my travels through the wilds of America, I visited most of the Indian tribes which populate the regions of the west. I commenced my pilgrimage at the mouth of the St. Lawrence, and ended it at the passes of the Mississippi. A nobler race of beings I never witnessed ; and I was surprised when I found that, though unacquainted with any of the sciences, they were masters of the art of surgery. During my travels, I found a number of the aborigines who had been wounded and mangled in the wars, but I never found one who was in the least deformed by the fracture of bones, and the numerous accidents to which Indian warfare is liable ; not a single amputation. I had noticed in most of the hospitals of Europe, that but few of the inmates who had been confined came out without being lame and deformed ; and when I recollected this, I expressed my astonishment to the chiefs of the tribes, that the invalids perfectly recovered the use of their limbs, and did not bear any of the marks of previous disaster. To my observations one of the chiefs replied, ‘You have men to mend limbs, who are taught by men to do so ; we obtain our knowledge from the Great Spirit. We are perfect, for our knowledge comes from the clouds ; yours comes from man only.’ I confess that I was thunderstruck with the reply ; but I could not but admit the justice, accuracy and pungency of the remark.”

The celebrated missionary, John Zimmerman, as early as the year 1620, made a voyage to Patagonia, under the auspices of the Moravian church, and in one of his letters to the Synod, took an elaborate view of that people, and from the which we make the following extract.

"I was not more surprised than delighted to find among this people men who were practically and theoretically acquainted with surgery, though they were unacquainted with the terms and phrases which are employed by civilized nations. I inquired of them how they became acquainted with the art ; their reply was, our God forms not his mortals without intelligence, and he has wisely ordained that we should all possess the capacity of supplying our wants. He that formed us, endowed us with the necessary knowledge to enable us to heal our wounds, and restore our fractured bones."

## CHAPTER VI.

### DISLOCATIONS.

#### *Description.*

When the bones are thrown from their natural cavities, or articular surfaces, the accident is termed a dislocation, or luxation.

Some bones, in consequence of the structure of their joints, and their exposure to violence, are frequently dislocated, as the shoulder ; others again are very rarely dislocated.

Perhaps there is as much mischief and injury done in this branch of surgery, as there is in the treatment of fractures. Sir Astley Cooper, who wrote a learned treatise upon dislocations, has the following remarks. Of the "various accidents," says he, "which happen to the body, there are few which require more prompt assistance, or which more directly endanger the reputation of a surgeon, than cases of luxation. If much time shall have elapsed before the attempt at reduction is made, the difficulty of accomplishing it is proportionably increased, and not unfrequently becomes insuperable : and if the nature of the injury be unknown, and the luxation consequently be left unreduced, the patient will remain a living memorial of the surgeon's ignorance or inattention. 'What is the matter with me?' said a patient, who came to my house, placing himself before me, and directing my attention to his shoulder : 'Why, sir, your arm is dislocated.' 'Do you say so! Mr. — told me it was not out.' 'How long has it been dislocated?' 'Many weeks,' he replied. 'O, then, you had better not have any attempt at reduction made.' He said, 'Well, I will take care that Mr. — has no more bones to set, for I will expose his ignorance in that part of the country in which I live.' He was a man of malevolent disposition, and carried his threat into execution, to the great injury of the surgeon ; who was also frequently reminded of his want of skill by meeting his former patients in his rounds, and, what was worse, by hearing the following observation frequently repeated, 'Mr. — is a good apothecary, but he knows nothing of surgery.'"

In a dislocation of the os femoris, or thigh-bone, which still remains unreduced, a consultation was held upon the nature of the injury ; and, after a long consultation, a report was made, by one of the surgeons, to this effect : "Well, sir, thank God, *we are all agreed, that there is no dislocation.*"

During my attendance on the lectures of the late Dr. Wright Post, I recollect hearing him relate the following circumstance. He stated, that he was called to a case, where a number of physicians were in attendance ; and he found, upon examination, that it was a dislocation of the thigh-bone, instead of some other complaint for which they were treating him. Said he, "gentlemen, this is a dislocation of the os femoris, and if you will go with me to the lecture room, or museum, and examine the skeleton, I will convince you of it." And this was found to be the case, notwithstanding their ignorance of the fact.



Whether or not this dislocation was ever reduced, I do not now recollect. But it goes to show what little knowledge of this subject is possessed by the generality of physicians, or surgeons, not only in the country, but in cities. I was conversing, the other day, with a learned surgeon, in this city, on the dislocation of the joint. Said he, "it is useless to apply to any one for correct information on this subject, except a very few experienced practitioners."

A few days ago, a person was relating to me a case of fracture, or dislocation, in which a noted physician, or surgeon, displayed great ignorance in treating it. The patient afterwards told him, that if he should break his leg, he could treat it much better himself.

A Mr. Hawks, editor of a paper, in one of the eastern states, has been rendered a cripple for life, in consequence of ignorance, or malpractice, on the part of his attending physicians, or surgeons. Now, if the theoretical and practical part of this branch of surgery is, in this state, so little understood, is it not time that a treatise be given, that will enable practitioners to understand it, and successfully to treat dislocations. And such a treatise, I believe, will be found in the following pages.

A dislocation may be *partial* or *complete*, *simple* or *compound*; in the same sense of these terms as when they are used in reference to fractures.

#### Causes.

The causes of dislocation are, first, external violence; second, inordinate muscular action; third, diseased alteration of the articular process. The displacements which proceed from the last of these causes, are named spontaneous dislocations. For instance, the hip disease, or the *white swelling*.

Dislocations are generally occasioned by violence, and the force is applied whilst the bone dislocated is forming an angle with its socket. But it is necessary that the muscles should be in a great degree unprepared for resistance, or the greatest force will hardly produce them; but when they are unprepared, very slight accidents will often produce the effect. A fall in walking will sometimes dislocate the hip joint, when the muscles have been prepared for a different exertion.

#### Symptoms.

1st. *Articular Surfaces of the Bone not in contact*.—In dislocations, the articular surfaces of the bone are separated, which can be generally felt or seen, and the point where the dislocated bone is lodged is elevated or repressed. Hence, there is a change in the length of the limb. It is sometimes shorter, and sometimes longer.

2d. *Immobility of the Limb*.—In a dislocation, the patient is unable to move the limb, little if any; and this is the most striking characteristic symptom. Sometimes there is a little motion immediately after the accident.

*Elevation or Depression of the Bone*.—There is usually a prominence, or depression, felt in every dislocation, which is also another excellent mark of discrimination.

*Difference in the Length of the Limb*.—As before intimated, by comparing one limb with the other, a difference in length will be perceived. It is sometimes shorter, sometimes longer.

*Rotation.*—By rotating the dislocated limb, the head of the bone may be readily felt in its new situation.

These are the prominent symptoms in a dislocation, and will enable every person of common discernment to detect the accident in most cases.

*Fracture and Dislocation.*—A dislocation is sometimes accompanied with fracture.

When a bone is both broken and dislocated, it is proper to endeavour to reduce the dislocation without loss of time, taking care that the fractured part be strongly bandaged, in splints, to prevent any injury to the muscles; for, if this be not done at first, it cannot be afterwards effected without danger of reproducing the fracture.

If a compound fracture of the leg, and a dislocation of the shoulder, happen in an individual at the same time, the reduction of the arm should be immediately undertaken, after the fractured limb has been secured in splints.

### *Treatment of Dislocations in general.*

The ordinary method of reducing dislocations, is by *extension and counter extension*, with different modifications. This is accomplished, usually, in two ways: first, by manual force; second, by compound pulleys. Many surgeons, both in Europe and America, highly extol the latter method; and it is practised by many, particularly in our hospitals; but there are very serious objections to their use. They are apt to exert too much violence; and, besides, they hinder another part of the operation, indispensably requisite, which is that of flexion, abduction, &c., or making use of the limb as a lever, to return the head of the bone into its socket, or natural situation.

Dr. Reece, speaking of the effects of violence in reducing dislocations, thus remarks:

“The mischiefs resulting from violence done to the structure of the neighbouring parts, in attempts to reduce a dislocation, are often much greater than those to which Cooper alludes in his remarks. The following extract is taken from the last edition of the ‘First Lines,’ and may be found in a note by the Philadelphia editor, vol. ii. p. 469.

“In the third volume of the *Repertoire d’Anatomie*, several cases of long-continued luxation of the humerus, in which severe mischief arose from the attempt to reduce the parts, are reported by M. Flaubert, M. D. In one case, one of the axillary nerves was torn from the spinal marrow; and in others, paralysis of the arm was the result. After having succeeded completely in several previous instances, Professor Gibson has, within a few years, met with two instances in which the axillary artery, having formed unnatural adhesions, was torn across, and the death of the patients consequently resulted from the attempts at reduction.

“One of these cases is reported in the third number of the *Am. Journal of the Med. Sciences*. The patient, a stout, muscular, athletic man, about six feet high, applied to Professor Gibson on account of a luxation of the left os humeri, at the shoulder-joint, of nine weeks’ standing. He was admitted into the Alms house Infirmary, on the

6th of March. The antiphlogistic system was pursued until the 15th, when attempts at reduction were made, in the presence of the surgeons and students of the house, which was not accomplished until after the lapse of an hour and three quarters from the commencement of the operation.

"On the 16th there was a general swelling over the deltoid and pectoral muscles, with a distinct pulsation of an aneurismal character. On the morning of the 17th, it had increased considerably, and in consultation it was decided that the subclavian artery should be tied without delay. This was accordingly done by Professor G."

This patient died on the tenth day after the ligature of the subclavian.

Doctor *Nathan R. Smith* gives the following judicious objections to the use of pulleys :

"The propriety of employing pulleys," says he, "for the purpose of multiplying power in the treatment of dislocations of the hip, appears to be so tacitly and universally admitted, at the present time, that one who contends against it can scarcely expect to obtain a favourable hearing. But the facts which I have stated above, and the inferences which they justify, are certainly hostile to their general employment. If it be important, as I have endeavoured to show, that, during the attempt, the attitude of the member should be so varied as to favour the action of those muscles which are so important in aiding to effect the reduction, then certainly there is to be deduced from this a strong objection to the use of any mechanism which precludes the possibility of taking advantage of the action of the muscles. While powerfully extending the limb with pulleys, it is obvious that no bending movements, by which we use the bone as a lever to throw the head into its place and call the muscles into action, can be employed ; the effort must be made in one undeviating direction. In the use of the pulleys, also, we are compelled to extend powerful muscles, the resistance of which can be completely evaded by a little address in the movements of the limb.

Thus, when, in a case of dislocation on the *dursum ilii*, we endeavour to effect the reduction of the bone by extension, made by pulleys from the knee or ankle, the extending effort which we then make is directly resisted by the *glutei* muscles, the most powerful in the body. Indeed, the reduction cannot be effected by dragging the limb directly downward in this manner, without putting them violently upon the stretch ; because, before the head can be returned to its place by this movement, the trochanter, where the muscles are inserted, must be carried far outward from the pelvis at the moment that the head mounts over the margin of the cup, and also downward as low as its usual attitude ; and thus will the points of origin and insertion of those muscles be widely removed, and they, of course, rendered very tense. But, could the thigh be abducted at the moment that extension is being made, it is apparent that the trochanter would be thrown upward at the moment that the head descended, and thus would the points of origin and insertion be approximated, and the muscles relaxed, while, at the same moment, the adductor muscles, which aid the reduction, would be called powerfully into exercise. Indeed, it

is obvious that, in effecting the reduction of this dislocation by pulleys, nearly all the muscles which are inserted into the thigh-bone are violently strained, and in such a manner that they resist with great effect.

"When we have effected, by the force of the hands, a partial approximation of the head of the bone to the socket, we find that the business is suddenly taken out of our hands by the contraction of the muscles, and the bone springs into its place with an audible snap, and we feel a shock—an impulse given to our hands by the effort of the muscles. Now this cannot so readily occur when the pulleys are employed, because the limb is too rigidly fixed;—the pulleys furnish an unyielding, inelastic force, which will not yield the limb to the action of the muscles, which, if they had command of it, would throw the dislocated extremity home. They perhaps make spasmodic efforts, during the extension, to effect this, but they are foiled by the resistance of the pulleys; and as their effort cannot persist long, it accomplishes nothing.

"The pulleys rarely succeed in the reduction of this dislocation, without the employment of venesection, and other means, to effect the relaxation of the muscles; and the violence employed is necessarily such, that often alarming prostration results. It is impossible to estimate correctly the degree of force which we employ with the pulleys.

"Lastly, the pulleys, exercising great power, are often employed without effect, in cases in which, subsequently, very gentle force, or accident, has accomplished the reduction with the greatest facility."—(*Smith's Surgical Memoirs*, p. 176.)

Another great objection to the pulleys, is the liability of the bone to be again very easily displaced, arising, probably, from the great force which has been exerted upon the muscles. Again, according to the method practised, as recommended by Sir Astley Cooper, the bandages, being placed above the knee, are very liable to slip off, and thus frustrate the designs of the operator.

In reducing dislocations, then, the compound pulleys are to be dispensed with on all occasions, as not answering the indications required, and the necessary extension and counter-extension is to be made by manual force, or that exerted by assistants; but it is to be recollected that there is very little force or extension generally required in reducing a dislocation; much less than is supposed, or is usually practised. Indeed, it has now become questionable whether any extension or counter-extension is at all necessary or required. A method has been practised by many, particularly the family of Sweets, in one of the New-England States, for half a century or more, to reduce dislocations without any extension whatever; and it is done in such a simple and easy manner, that no assistants are required. These men have obtained or possessed this art, it appears, without much anatomical knowledge, or even much education. They have acquired it by a natural genius, or turn of mind, aided by extensive practice in the most difficult and complicated cases; and they have succeeded when the most celebrated surgeons have abandoned cases as hopeless, and so often, and under such a variety of circumstances,



that their superior skill in reducing luxations is placed beyond all doubt, and generally admitted. One of the Sweets was called to a case in this city, many years ago, and succeeded in treating it successfully, where the other physicians or surgeons had failed.

He succeeded, likewise, in another case, of a dislocation of the hip, and after a professor of surgery and others had exerted great force in vain, and abandoned it as irreducible.

In the case of a Captain Russel, where his shoulder was dislocated, and where the man was dreadfully tortured by the violence exerted by two physicians, who in vain attempted to reduce it, Sweet came, and without any assistance, by a certain motion, (hereafter to be explained,) returned the bone to its original situation in a few seconds.

Having heard so much, during my life, of the skill of Sweet, in dislocations, I was ever anxious to come in possession of it, although some of the faculty affected to despise the man, merely through envy, jealousy, prejudice, or for departing from what they call "a scientific," or orthodox course of practice. An opportunity presented itself some time ago, to obtain this knowledge. A son-in-law of Dr. Sweet came to this city, who imparted to the students of our school his peculiar method of treating luxations; and subsequently to this, one of the Dr. Sweets came to this city to practise, and I accompanied him, upon his invitation, to witness his treatment. The method pursued by both of these men, I found, accorded with each other. I shall now disclose, or give the Sweet principle of "bone setting," and afterwards state how far it may be successfully applied, or practised. 1st. The operation is performed, according to this plan, by the practitioner himself, although, in some cases, an assistant is required. In order to illustrate the principle, I will give the method of reducing a dislocation of the hip.

Instead of it being performed by *extension* and *counter-extension*, it is done by a *compound movement*. The patient must be placed upon a table, upon a floor, or a bed, upon his back; then the practitioner seizes the dislocated leg, and flexes or bends it a little, taking hold principally of the knee with one hand, and the ankle with the other. After having very much flexed the leg upon the thigh, for the purpose of converting the leg into a lever, he carries it a little outward; in the next place, the thigh is to be gradually abducted; and, lastly, the operator freely pushes the leg upwards upon the pelvis, by the knee, towards the face, inclining the leg a little to the opposite side, as represented in the annexed plate. I noticed, that Dr. Sweet, after freely flexing the leg upon the pelvis, rotated it in different directions, to give an opportunity for the head of the bone to pass over the brim of the acetabulum.

This is the principle, or method, to be employed in every species of dislocation; and in this manner he often attempted to reduce dislocations which had been displaced for eight or ten years, and even where the joint was in a state of ankylosis, or stiff; but I never could learn with any degree of success. The elder Sweet, I presume, never attempted any thing of this kind; some of his followers, being probably more sanguine than their predecessor.

After learning and witnessing this practice, I began closely to ex-



No. 11

Representation of the Sweet, or Lever Principle of reducing Dislocations.



amine its merits, and defects. I found that the principle was good, but that it was abused, and often wrongly applied.

It certainly does appear, by numerous cases, that the greatest force that can be applied, even by the pulleys, is not sufficient to reduce some kinds of dislocations, unless the limb be rotated in such a manner as favours the action of the muscles, and thus throw the head of bone towards its socket. "After attempting," says Smith, "the ordinary methods by extension, in vain, to reduce a dislocation, he, Sweet, bent the leg upon the knee, seized the leg, and using it as a lever, rotated the thigh a little outwards; then he gently abducted the thigh; and, lastly, flexed it freely on the pelvis, by carrying the knee towards the face of the patient."

These movements "instantly succeeded, and with little effort of strength." But, to return to the merits of the operation, or practice. Having availed myself of the benefit arising from a knowledge of the principle; I find that, although it possesses great merits, often of much practical importance, yet it does not, as far as my experience goes, entirely supersede the ordinary method of extension and counter-extension. I therefore have, upon the comparative merits of both methods, adopted *neither* exclusively; but have combined, or united the *distinguishing principles of both*.

1st. Let very moderate extension and counter-extension be made, then let the Sweet principle, or the *compound movement*, before mentioned, with *abduction, flexion* and *rotation*, be practised in connexion with such extension, by which the improvements or advantages are combined, and put in execution at the same time.

The first thing, then, to be attended to, in reducing dislocations, is the position of the patient. He must be placed, as before intimated, in such a manner that the body will not be subjected to change or alteration; in other words, his posture, or position, must be firm and secure. After the patient has been properly placed, the joint or socket from whence the bone has been thrown must be firmly and securely fastened by the use of a towel, sheet, or suitable bandage. This should be fastened, or firmly held by assistants. The practitioner will now take hold of the dislocated limb, near the seat of it; and he, with other assistants, will make extension, while those who have hold of the sheet, or bandage, which secures the socket or joint, will make counter-extension; and it is very important that this extension and counter-extension should be made extremely slow and gradual.

Says a writer, "With respect to the means to be employed, for reducing dislocations, it is now generally agreed amongst the most eminent surgeons, that force should be only gradually applied. Violence is as likely to tear sound parts as to reduce those which are luxated; it calls up all the powers of resistance to oppose the efforts making by the surgeon. But it is his duty to produce gradually that state of fatigue and relaxation which is sure to follow continued extension, and not attempt at once to overpower the action of the muscles."

The extension should always be first made in the same direction in which the dislocated bone is thrown; but in proportion as the muscles yield, the bone is to be gradually brought back into its natural position. Thus the head of the bone becomes disengaged from the parts among which it has been placed, and is brought back to the articular cavity



again, by being made to follow the same course which it took in escaping from it.

Extension will prove quite unavailing, unless the bone, with which the dislocated head is naturally articulated, be kept motionless by counter-extension, or a force at least equal to the other, but made in a contrary direction.

The mode of fixing the scapula and pelvis, in luxations of the shoulder and thigh, will be hereafter described.

Much dispute has arisen respecting the part of the limb on which extension should be made. The English surgeons apply it on a dislocated limb; the French, on the contrary, apply it to the lower part of the limb, which is articulated with the dislocated one; and this, I think, for some reasons is preferable; and one is, that the dislocation can be reduced often without affixing any bandage to the limb. The extension then must be continued, and in a right line, or the same direction in which the dislocated limb lies, and as extension is made, it must be gradually brought to a straight or natural position.

The dislocated limb must often be compared with the sound one, to ascertain whether the head of the bone has been brought to a level with the socket; and when this is the case, or nearly so, the assistants may slightly relax their extension, while the practitioner will freely flex or bend the limb, in the manner as before directed; and the muscles will now replace the bone. The limb may be occasionally rotated while the assistants are making the necessary extension, as a very little change in the position of the bone will often return it to its place. Sometimes it is necessary to elevate it, that it may pass over the brim of the socket.

The reduction of a dislocation is known by the limb recovering its natural length, shape and direction, and being able to perform certain motions, not possible while the bone was out of its place. The patient experiences a great and sudden diminution of pain, and very often the head of the bone makes a noise or snap at the moment when it turns into the cavity of the joint.

When the bone has been reduced, the patient should be placed in bed, if he has not been before; and, after a bandage has been applied, refrigerant and astringent lotions or washes may be applied, such as equal parts of *spirits*, *rain-water* and *vinegar*, to which a little fine salt has been added.

In cases where, before the accident or after, there is great pain, swelling or inflammation, fomentations must be applied: equal parts of *wormwood* and *hops*, simmered in *vinegar*, and enclosed in a muslin or linen bag, and placed on the parts. I have applied this with decided benefit and success. In one case, it so far reduced the swelling and pain, that the patient could scarcely be persuaded that his thigh was dislocated.

Much mischief has been done by attempting to reduce old dislocations; the integuments often become lacerated or torn, and the patient is rendered much worse. No definite time can be given, as this depends upon the history of the disease, state of the joint, &c. It is not proper to attempt to reduce some dislocations after a month; but some, again, have been reduced even after three months. This

point must be determined by the judgment and experience of the practitioner.

One of the family of Sweets attempted to reduce three cases of old dislocations of the hip, which had arisen from the *white swelling*. One, a female, about fifteen years of age, I attended, and cured; but a new socket had formed for the joint, which enabled her to walk about as well as ever, although there was some prominence of the hip, with a little lameness.

The second case was a young woman, who had received an injury of the hip during the act of moving from a fire. She had been confined to her bed for a length of time, with excessive swelling and inflammation, which resulted in extensive suppuration. The whole hip, in every direction from the joint, was covered with sinous ulcers, which also affected the bones. After some length of time, I succeeded in curing the disease; but an artificial joint had previously formed, with partial *anchylosis* or stiffness.

The third case was that of a boy, who had, for two or three years, a white swelling of the hip, which had likewise thrown the head of the femur, or thigh-bone, from its cavity. I succeeded, also, in curing the disease, but not in reducing the dislocation, as I never entertained an idea of this nature. But all these patients, or their parents, having heard of the great skill of Dr. Sweet, sent for him, and he attempted to reduce them, but without success, as every person, the least acquainted with surgery, must know.

I assisted him to go through the operation with one of the worst of the cases; and such violence did he use, that I was really afraid that we should so far injure the female, that an indictment would be brought against us for mal-practice, if not for manslaughter.

I know not, however, that Dr. Sweet held out much encouragement to any of these patients: but it appeared to me, that the very act of attempting to reduce a dislocation of this nature, carried the marks of empiricism upon the very face of it. I must add, at the same time, as before stated, that the principle in itself, properly applied, is good; and I cannot think that the elder Sweet ever attempted to reduce old dislocations of this kind.

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#### SECTION I.

##### *Compound Dislocations.*

*Compound Dislocations* are those which are attended with a wound communicating with the cavities of the injured joints. Some joints are much more disposed than others to compound dislocations. The accident scarcely ever takes place at the hip. Sir A. Cooper has known one instance of it at the shoulder, and he has seen one of the knee; but the case is very frequent in the ankle, elbow and wrist.—(*On Dislocations*, p. 19.) In most instances, the opening in the skin is caused by the protrusion of the bone, but sometimes by the part having struck against a hard or an irregular body. Cases of this description are frequently attended with great danger.

7. In the treatment of compound dislocations, after the bones and integuments have been replaced, the *slippery elm bark* poultice will be very valuable. It will reduce the inflammation, favour suppuration, prevent mortification, relieve the pain, and, in short, prevent the necessity of amputation. In compound dislocations of the ankle-joint, I have made an apparatus which will be found very useful. A piece of pine, or any kind of wood, is hollowed or excavated to suit the shape of the leg, and to this there is fixed a foot-piece. The leg, when dressed, is placed in it, and secured by a bandage. By this means, the foot and leg are kept perfectly secure and easy, without any danger of motion or displacement, even though the position of the patient be often changed by sitting up, removing, or in any other manner.

The treatment of a compound dislocation requires the reduction to be effected without delay, and with as little violence and disturbance as possible. When the extremity of the bone protrudes, and is smeared with sand or dirt, as frequently happens, from its having touched the ground, "it should be washed with warm water, as the least extraneous matter admitted into the joint will produce and support a suppurative process; and the utmost care should be taken to remove every portion of it adhering to the end of the bone. If the bone be shattered, the finger is to be passed into the joint, and the detached pieces are to be removed; but this is to be done in the most gentle manner possible, so as not to occasion unnecessary irritation: and, if the wound be so small as to admit the finger with difficulty, and small, loose pieces of bone even be felt, the integuments should be divided, to allow of such portions being removed without violence."—(*Sir A. Cooper, on Dislocations*, p. 254.) If any difficulty of reduction should arise from the bone being girt by the integuments, the opening in them should be dilated with a scalpel. The limb is then to be placed in splints, with the necessary pads, eighteen-tailed bandage, &c. Sir A. Cooper judiciously recommends the portions of this bandage not to be sewed together, "but passed under the leg, so that one piece may be removed when it becomes stiff;" and, by affixing another to its end, before it is withdrawn, the fresh piece may be applied without any disturbance of the limb.—(*Surg. Essays*, part 2. p. 120.) The wound is to be freed from any dirt, clots of blood, or other extraneous matter, and its lips are to be accurately brought together with strips of adhesive plaster.

The following are the instructions delivered by Sir A. Cooper on the subject of dressings. "If the patient complain of considerable pain in the part, in four or five days the bandage may be raised to examine the wound; and, if there be much inflammation, a corner of the lint (or other dressing) should be lifted from the wound, to give vent to any matter which may have formed; but this ought to be done with great circumspection, as there is danger of disturbing the adhesive process, if that be proceeding without suppuration. By this local treatment, it will every now and then happen, that the wound will be closed by adhesion; but if, in a few days, it be not, and suppuration take place, the matter should have an opportunity of escaping; and,

the lint being removed, simple dressings should be applied. After a week or ten days, if there be suppuration, with much surrounding inflammation, poultices should be applied upon the wound, leeches in its neighbourhood; and upon the limb, at a distance, the evaporating lotion should still be employed; but, as soon as the inflammation is lessened, the poultices should be discontinued.”—(*Surgical Essays*, part 2. p. 121.)

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## SECTION II.

### PARTICULAR DISLOCATIONS.

#### *Dislocations of the Lower Jaw.*

The lower jaw can only be luxated forwards, and either one or both of its condyles may become displaced in this direction. Every dislocation except that forwards is rendered impossible by the formation of the parts. The lower jaw cannot even be dislocated forwards, unless the mouth, just before the occurrence of the accident, be very much open. Whenever the chin is considerably depressed, the condyles slide from behind forwards under the transverse root of the zygomatic processes. The cartilaginous cap which envelopes the condyles, and follows them in all their motions, still affords them an articular cavity; but, the depression of the bone continuing, the ligaments give way, the condyles glide and slip under the zygomatic arches. Hence, a dislocation mostly happens while the patient is laughing, gaping, &c. A blow on the jaw, when the mouth is wide open, may easily cause the accident. The case has occasionally arisen from the exercise of great force in drawing out teeth. Sir Astley Cooper has known a complete luxation, that is to say, of both condyles, produced by a boy suddenly putting an apple into his mouth to keep it from the reach of a playfellow.—(*On Dislocations*, p. 389.) Whenever the jaw has once been dislocated, the same causes more easily reproduce the occurrence. In certain individuals the ligaments are so loose, and the muscles so weak, that a dislocation is produced by any slight attempt to yawn, laugh, or (as Lamotte has observed) to bite any substance which is rather large.—(*Leveillé, Nouvelle Doctrine Chirurgicale*, t. ii. p. 54.) There have been persons who could scarcely ever laugh heartily without their jaws being luxated. But of all the causes of this occurrence, yawning alone, even without the combination of any external force, is by far the most common.

When the jaw is depressed, and its angles, to the external sides of which the masseters are attached, are carried upwards and backwards, if these muscles contract, the greater part of their force tends to bring the condyles into the zygomatic depression.—(*Boyer*.)

Dislocations of the lower jaw are attended with a great deal of pain, which Boyer imputes to the pressure produced by the condyles on the deep seated temporal nerves, and those going to the masseters, which nerves pass before the roots of the zygomatic process. The mouth is wide open, and cannot be shut. It is more open in recent dislocations, than in those which have continued for some time. An empty space is felt before the ear, in the natural situation of the con-



dyles. The coronal process forms, under the cheek bone, a prominence, which may be felt through the cheek, or from within the mouth. The cheeks and temples are flattened by the lengthening of the temporal, masseter and buccinator muscles. The saliva flows in large quantities from the mouth, the secretion of which fluid is greatly increased by the irritation of the accident. The arch, formed by the teeth of the lower jaw, is situated more forward than that formed by the teeth of the upper jaw. During the first five days after the accident, the patient can neither speak nor swallow.—(*Boyer.*) When only one condyle is dislocated, the mouth is distorted, and turned towards the opposite side, while the fellow-teeth of the jaws do not correspond. However, Mr. Hey asserts, that frequently the position of the chin is not perceptibly altered.—(*Practical Observations*, p. 322.) The mouth cannot be shut; but it is not so widely open as in the complete luxation.—(*Sir A. Cooper, on Dislocations*, p. 392.)

When a dislocated jaw has remained unreduced for several days or weeks, the symptoms are not so well marked. In such instances, the chin becomes gradually approximated to the upper jaw; the patient recovers, by degrees, the faculty of speaking and swallowing; but he stammers, and the saliva dribbles from his mouth. The sufferings induced by a dislocated jaw, it is said, may even prove fatal, if the case continue unrectified; but we are not to believe Hippocrates, when he positively declares the accident mortal if not reduced before the tenth day. Indeed, Sir Astley Cooper, in noticing the severity of the pain, assures us, that he has never seen any dangerous effect produced; on the contrary, that, in time, the jaw becomes more closed, and a considerable degree of its motion is restored.—(*On Dislocations*, p. 389.)

Monteggia attended a man, two months after such a luxation, which had not been understood, and Fabricius ab Aquapendente assures us, that he had never seen the prognostic of Hippocrates verified, though he had had many patients of this sort under his care.—(*Leveillé, Nouvelle Doctrine, Chirurgicale*, t. ii. p. 58.)

#### *Mode of Reduction.*

Dislocations of the lower jaw may be reduced in the following manner: the practitioner is first to wrap some linen around his thumbs, to keep them from being hurt by the patient's teeth, and then introduce them into the mouth, as far as possible, along the grinding teeth. At the same time, he is to place his fingers under the chin and base of the jaw, and while he depresses the molares with his thumbs, he raises the chin with his fingers, by which means the condyles become disengaged from their situation; at which instant the muscles draw those parts so rapidly back into the articular cavities again, that the surgeon's thumbs might sometimes be hurt, did he not immediately move them outwards between the cheek and the jaw.

The reduction being accomplished, a fresh displacement is to be prevented by applying a bandage, as recommended for the fractured jaw. For a few days the patient should avoid such food as requires much mastication.

The ancients used to place between the grinding teeth two pieces of stick, and while they used them as levers to depress the back part of the bone, they raised the chin by means of a bandage. The late Mr. Fox, the dentist, had a patient whose jaw was dislocated on both sides in the extraction of a tooth: the reduction was first effected on one side by placing a piece of wood, a foot long, upon the grinders, and then raising the part of it which was held in the hand. Mr. Fox next reduced the other condyle in the same manner. Sir Astley Cooper, in reducing a complete luxation of the lower jaw, prefers putting the patient in the recumbent posture, introducing two corks behind the molar teeth, and then elevating the chin, and which is probably the easiest and best method.—(*On Dislocations*, p. 391.) When only one condyle is dislocated, whatever method of reduction be followed, it need only be applied to the side affected.

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### SECTION III.

#### *Dislocation of the Shoulder, or Humerus.*

The os humeri is liable to be thrown from the glenoid cavity of the scapula in four directions: three of these luxations are complete; the other is only partial. The first is *downwards and inwards*, the dislocation *into the axilla*, as it is usually called; in which case the head of the bone rests upon the inner side of the inferior costa of the scapula. The second is *forwards under the pectoral muscle*, the head of the bone being placed below the middle of the clavicle, and on the sternal side of the coracoid process. The third is the dislocation *backwards*, in which the head of the bone can be plainly felt and seen, as a protuberance at the back and outer part of the inferior costa of the scapula, upon the dorsum of this bone. The fourth, which is only partial, is when the front of the capsular ligament is torn, and the head of the bone rests against the outer side of the coracoid process. “Of the dislocation in the axilla (says Sir Astley Cooper) I have seen a multitude of instances; of that forwards on the inner side of the coracoid process, several; although it is much less frequent than that in the axilla; of the dislocation backwards, I have seen only two instances, during the practice of my profession for thirty-eight years.”—(*On Dislocations*, &c. p. 416.)

#### *Symptoms.*

In general, the diagnosis of dislocations of the humerus is attended with no difficulties.

Whatever may be the mode and situation of the dislocation, there always exists, as Hippocrates has remarked, a manifest depression under the acromion, which forms a more evident projection than in the natural state. Almost all the motions of the arm are painful; some cannot be performed in any degree; and they are all very limited. The arm cannot move without the shoulder moving also, because, the articulation being no longer able to execute its functions, both it and the shoulder form, as it were, one body. When the limb

is moved, a slight crepitus may sometimes be felt, probably in consequence of the synovia having escaped through the laceration of the capsule.—(*A. Cooper on Dislocations*, p. 418.)

To these symptoms, generally characteristic of every sort of dislocation of the humerus, are to be added such as are peculiar to each particular case. When the luxation is downwards, the arm is a little longer than in the natural state; the natural roundness of the shoulder is lost in consequence of the deltoid muscle being drawn down with the head of the bone; and the patient cannot use the arm. The elbow is more or less removed from the axis of the body by the action of the deltoid; the long head of the biceps and supraspinatus muscle being also stretched, and tending to draw the bone outwards. The pain which arises from this position compels the patient to lean towards the dislocated limb, to keep the fore-arm half bent, and the elbow supported on his hip.

With the general symptoms of dislocations of the humerus, a luxation inward has the following. The elbow, separated from the axis of the body, is inclined a little backward. The humerus seems to be directed towards the middle of the clavicle. Motion backwards is not very painful, but that forwards is infinitely so. A manifest prominence under the great pectoral muscle. The arm is said, by Desault, to be a very little longer than in the natural state: by Sir Astley Cooper it is described as being somewhat shortened, (*On Dislocations*, p. 435.) and the posture is the same as in the foregoing case.

Were a dislocation outwards to present itself, it would be particularly characterized by a hard tumour under the spine of the scapula; by the direction of the elbow forwards, and by the somewhat increased length of the arm. The motion of the arm would be impaired, but not in so great a degree as in the foregoing cases. In one example, the arm could be moved considerably either upwards or downwards; but motion forwards or backwards was very limited. And it would seem that this dislocation may be attended with the peculiarity of the arm lying close to the side.

### *Reduction.*

We may refer to two general classes the infinitely various number of means proposed for the reduction of a dislocated humerus. The first are designed to push back, by some kind of mechanical force, the head of the bone into the cavity from which it is displaced, either with or without making previous extension. The others are merely intended to disengage the head of the bone from the place which it accidentally occupies, leaving it to be put into its natural situation by the action of the muscles.

By the first means, art effects every thing; by the second, it limits its interference to the suitable direction of the powers of nature. In the first method, the force externally applied always operates on the bone in the diagonal of two powers, which resist each other at a more or less acute angle; in the last, the power is only in one direction.

All the means intended to operate in the first way, act nearly in

the following manner. Something placed under the axilla serves as a fulcrum, on which the arm is moved as a lever, the resistance being produced by the dislocated head of the humerus, while the power is applied either to the lower part of this bone, or the wrist. The condyles of the humerus being pushed downwards and inwards, the head of the bone is necessarily moved in the opposite direction, towards the glenoid cavity, into which it slips with more or less facility.

This dislocation is very easily reduced. A towel, doubled or folded several times, should be placed under the arm-pit, or in the axilla, on a thick linen or muslin compress; the two ends of which ascend obliquely before and behind the chest, and meet each other at the sound, or opposite shoulder, and are held there by an assistant, in order to secure the trunk or shoulder, and make the necessary counter-extension. The practitioner will now take hold of the arm, and gradually extend it in the direction in which it has been dislocated. With the right hand seize the elbow of the dislocated arm, keep it bent, and gently move it from the body. With the left hand crowd a large ball of yarn as far under the arm-pit as possible; then use the arm as a lever, the ball acting as a fulcrum over which the head of the bone is guided into its socket.

There have been various other means recommended, to reduce this species of dislocation, but few, if any, are worth insertion.

Reduction by means of the surgeon's heel in the patient's axilla is a well known method, which is commended by Sir Astley Cooper as the best in three fourths of recent dislocations. The patient (he observes) should be placed in the recumbent posture, upon a table or sofa, and near its edge. "The surgeon then binds a wetted roller round the arm, immediately above the elbow, upon which he ties a handkerchief. Then, with one foot resting upon the floor, he separates the patient's elbow from his side, and places the heel of his other foot in the axilla, or arm-pit." The arm is then steadily drawn with the handkerchief for three or four minutes, at the end of which the bone, in common cases, is easily replaced. If more force be required, a long towel can be used, with which several persons may pull. Sir Astley Cooper generally bends the fore-arm nearly to a right angle with the *os humeri*, because this position relaxes the biceps, and lessens its resistance: in many cases, however, he makes the extension at the wrist; a plan in which he finds more force requisite, but the bandage is less apt to slip.

After the reduction, a strengthening plaster should be applied on the shoulder, and the arm worn in a sling, and very great care used to prevent its being again displaced.

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#### SECTION IV.

##### *Dislocation of the Fore-arm from the Humerus.*

Notwithstanding the extent and strength of the articulation of the radius and ulna, or the elbow joint, it sometimes becomes dislo-



cated; most generally backwards; sometimes, laterally but very rarely forwards. This accident always takes place from a fall on the hand.

The fore-arm is in a state of half flexion, and every attempt to extend it produces acute pain. The situation of the olecranon, with respect to the condyles of the humerus, is changed. The olecranon, which, in the natural state, is placed on a level with the external condyle, which is itself situated lower than the internal, is even higher than the latter. Posteriorly a considerable projection is formed by the ulna and radius. On each side of the olecranon, a hollow appears. A considerable hard swelling is felt on the fore part of the joint, arising from the projection of the lower end of the humerus. The hand and fore-arm are supine, and the power of bending the joint is in a great measure lost.—(*Sir Astley Cooper on Dislocations*, p. 468.)

### *Reduction.*

The patient being seated, an assistant is to take hold of the middle of the humerus, and make counter-extension, while another assistant makes extension at the wrist. The practitioner, seated on the outside, grasps the elbow with his two hands, by applying the fore-finger of each to the anterior part of the humerus, and the thumbs to the posterior, with which he presses on the olecranon, in a direction downwards and forwards. This method will generally be successful. If the strength of the patient, or the long continuance of the luxation, render it necessary to employ a greater force, extension is to be made with a towel applied on the wrist, and a cushion is to be placed in the axilla, and the arm and trunk fixed as is done in cases of luxation of the humerus.

In Sir Astley Cooper's method, the patient sits in a chair. The surgeon places his knee on the inner side of the elbow joint, in the bend of the arm, and, taking hold of the patient's wrist, bends the arm. At the same time he presses on the radius and ulna with his knee, so as to separate them from the os humeri. Thus, the coronoid process is pushed out of the posterior fossa of the humerus; and while the pressure is kept up with the knee, the arm is to be forcibly but slowly bent, and the reduction is soon effected. According to the same authority, the bones may also be reduced by bending the arm over a bedpost, or by bending it while it is engaged in the opening of the back of the elbow-chair in which the patient sits.—(*On Dislocations*, p. 469.)

After this dislocation has been reduced, a bandage should be put round the elbow, and wet with a cooling wash; and then it should be placed in the angular coneave splint, placed in a sling, and worn across the abdomen.

At the end of seven or eight days, when the inflammation has subsided, the articulation is to be gently moved, and the motion is to be increased every day, in order to prevent an ankylosis, to which there is a great tendency.

## SECTION V.

*Dislocation of the lower end of the Radius.*

There are two kinds of dislocations of the radius ; the one forward, the other backward. The first is very frequent ; the second is much less so.

In the luxation of the lower head of the radius forwards, described by Desault, the symptoms are, constant pronation of the fore-arm ; an inability to perform supination, and great pain on its being attempted ; an unusual projection at the back of the joint, in consequence of the protrusion of the little head of the ulna through the capsule ; the position of the radius is more forward than natural ; constant adduction of the thumb, which is almost always extended ; a half bent state of the fore-arm, and very often of the fingers, which posture cannot be changed without considerable pain. The outer side of the hand is twisted backwards, and the inner forwards. The protuberance made on the fore part of the wrist, by the head of the radius, is very evident ; and, as Sir Astley Cooper observes, the styloid process of the radius is no longer situated opposite to the os trapezium. This case, he says, usually happens from a fall while the hand is bent back.—(*On Dislocations*, p. 503.)

Sometimes the lower head of the radius is driven through the skin, at the inside of the wrist, between the radial artery and the mass formed of the flexor tendons of the wrist and fingers. Cases of this description, when well managed, generally have a favourable termination, as we see in the case reported by M. Thomassin.—(*Journ. de Méd. t. xxxix.*)

A luxation of the radius backwards is characterized by symptoms the reverse of those above mentioned. They are, a violent supination of the limb ; inability to put it prone ; pain on making the attempt ; a tumour in front of the fore-arm, formed by the head of the ulna ; a projection backwards of the large head of the radius ; and adduction of the thumb.

*Reduction.*

When the dislocation is forwards, an assistant is to take hold of the elbow, and raise the arm a little from the body ; while another is to support the hand and fingers.

The surgeon is to take hold of the end of the fore-arm with both his hands ; one applied to the inside, the other to the outside, in such a manner that the two thumbs meet each other in front of the limb, between the ulna and radius, while the fingers are applied to the back of the wrist. He is then to endeavour to separate the two bones from each other, pushing the radius backwards and outwards, while the ulna is held in its proper place. At the same time, the assistant holding the hand, should try to bring it into a state of supination, and consequently the radius, which is its support. Thus pushed, in the direction contrary to that of the dislocation, by two powers, the radius

is moved outwards, and the ulna returns into the opening of the capsule, and into the sigmoid cavity.

Sir A. Cooper, who describes this case under the name of a dislocation of the lower end of the ulna backwards, reduces it by pressing the bone forwards, and maintains the reduction with splints well padded, and a compress of leather over the end of the ulna.—(*On Dislocations*, p. 505.)

Some time ago, I reduced a dislocation of this kind, which had existed a length of time, merely by making a little extension upon the arm, and then very much flexing or bending it, as has been previously explained.

#### SECTION VI.

##### *Dislocation of the Wrist.*

The wrist often appears to be dislocated, owing to the swelling and immobility which it suffers in consequence of external injury; but these symptoms, in the great majority of cases, are merely the effects of sprains; and real dislocation of the joint is an extremely rare occurrence. It may take place in two directions, forwards and backwards, the bones of the carpus being driven upwards, under either the extensors or the flexors. The causes are falls on the hand. The reduction is effected by extending the hand, and pressing on the dislocated bones, then bending or flexing it.

#### SECTION VII.

##### *Dislocation of the Thumb.*

The first, or proximal phalanx of the thumb, is occasionally dislocated from its connexion with the metacarpal bone, in consequence of falls or blows. It is usually driven upwards and backwards, where the extremity can be felt distinctly, while that of the metacarpal bone is not less perceptible on the palmar side.

The reduction of this apparently trivial displacement, has been generally found very difficult, and sometimes altogether impracticable; the reason of which would seem to be, that the lateral ligaments of the joint remain more or less entire, and, being separated by the wedge-shaped extremity of the metacarpal bone, to allow its passing between them, afford a serious obstacle to its return. The best mode of proceeding, is to extend the thumb with moderate force, then bend it, and, at the same time, to exert some pressure, to push it into its place.

The phalanges of the fingers are occasionally dislocated backwards, so that the displaced extremity rests on the dorsal surface of the corresponding bone. The accident can hardly be overlooked or mistaken, and the reduction is generally very easy, provided the force employed be directed chiefly upon the projecting end of the phalanx.

## SECTION VIII.

*Dislocation of the Thigh-bone, or Hip.*

The hip-joint, notwithstanding the great strength of all the parts which enter into its formation, is subject to dislocation in four different directions.

1. Upwards and backwards on the dorsum of the ilium.
2. Backwards into the sacro-ischiatic notch.
3. Downwards into the *foramen ovale*.
4. Forwards upon the pubis.

*1st. Dislocation upwards on the Dorsum Ilii.*

This dislocation is the most frequent of those which happen to the hip-joint, and the following are the signs by which its existence is known.

*Symptoms.*

The limb on the dislocated side is from one inch and a half to two inches and a half shorter than the other, as is well seen by comparing the maleoli interni, and by bending the foot at right angles with the leg. On the dislocated side the toe rests against the tarsus of the other foot. The knee and foot are turned inwards, and the knee is a little advanced upon the other. When the leg is attempted to be separated from the other, it cannot be accomplished, for the limb is firmly fixed in its new situation, so far as regards its motion outwards; but the thigh can be slightly bent across the other. If so much blood has not been effused, as to conceal the bones, the head of the thigh-bone can be perceived during the rotation of the knee inwards, moving upon the dorsum of the ilium; and the trochanter major advances towards the spinous process of the ilium, so as to be felt much nearer to it than usual. The trochanter is less prominent than that of the opposite side, for the neck of the bone and the trochanter are resting in the line of the surface of the dorsum ilii: upon a comparison of the two hips, the roundness of the dislocated side has disappeared. A practitioner, then, called to a severe and recent injury of the hip-joint, looks for a difference in length, change of position inwards, diminution of motion, and decreased projection of the trochanter. The accident with which the dislocation upwards is liable to be confounded, is the fracture of the neck of the thigh-bone, within the capsular ligament. Yet the marks of distinction are generally sufficiently strong to prevent an error in a person commonly attentive. In a fracture of the neck of the thigh-bone, the knee and foot are generally turned outwards: the trochanter is drawn backwards: the limb can be readily bent towards the abdomen, although with some pain: but, above all, the limb which is shortened from one to two inches, by the contraction of the muscles, can be made of the length of the other by a slight extension, and when the extension is abandoned, the leg is again shortened. If, when extended, the limb is rotated, a crepitus can often be felt, which ceases when rotation is performed under a shortened state of the limb. The fractured neck of the thigh-bone within



the capsular ligament, rarely occurs but in advanced age ; and it is the effect of the most trifling accidents, owing to the absorption which this part of the bone undergoes at advanced periods of life. Fractures externally to the capsular ligament occur at any age, but generally in the middle periods of life ; and these are easily distinguished by the crepitus which attends them if the limb be rotated, and the trochanter compressed with the hand. The position is the same as in fractures within the ligament. The proportion of fractures of the neck of the thigh-bone, is at least four cases to one of dislocation. (*See the plate.*)

This accident happens from falls on the side, while the foot is fixed, so that it cannot be carried outwards ; and the circumstance of having a load on the back, promotes the dislocation by increasing the strain. It happens most frequently in males, and is seldom met with either in very young or in very old subjects, being in a great measure confined to those in the vigour of life.

### *Mode of Reduction.*

To reduce this dislocation, the patient should be placed on his opposite side, upon a table or bed. A sheet, folded longitudinally, is first to be placed over the groin, or under the perineum. One end must be carried behind the patient, the other before ; and they must be either held by assistants, or fastened to one of the legs, or posts, of the bed. Thus, the pelvis, or the joint, will be secured, so as to allow the necessary extension to be made.

Great care must be taken, during the extension, to keep the scrotum and testicles in men, or the pudenda in women, from being hurt by the sheet. To prevent this, a little cotton may be placed under. A bandage made of American muslin must now be bound firm, immediately above the knee, or ankle, around the limb, from which two or three bandages must be fastened, in order to make the necessary extension. The practitioner will now take hold of the dislocated leg, while his assistants will make slow and gradual extension in the line made by the limb, when it is brought across the other thigh, a little above the knee. As soon as the head of the bone has been brought on a level with the acetabulum, or the socket, by the assistants, who are making the extension, the practitioner is to carry the leg first a little outward ; he will then flex or bend it, and carry it upwards on the abdomen, or towards the face : at the same time, a person must press hard upon the hip. This will throw the head of the bone into its natural cavity, or socket, and which is generally accompanied with a snap or jar.

The extension should always be made in a gradual and unremitting manner ; at first gently, but afterwards more strongly ; never violently. The difficulty of reduction arises from the great power and resistance of the muscles, especially the glutei and triceps, which will at length be fatigued, so as to yield to the extending force, if care be taken that it be maintained the necessary time, without the least intermission. Sometimes, when there is difficulty in bringing the head of

the bone over the lip of the acetabulum, Sir A. Cooper raises it by placing his arm under it near the joint.

The disappearance of all the symptoms, and the noise made by the head of the bone when it slips into the acetabulum, denote that the reduction is effected. This noise, however, is not always made when pulleys are used. The bone is afterwards to be kept from slipping out again, by tying the patient's thighs together, with a bandage placed a little above the knees. The patient should be kept in bed at least three weeks, live low, and rub the joint with the *green oil*, or *liniment*. A *strengthening plaster* should be also applied over the hip. Due time must be given for the lacerated ligaments to unite, and the sprained parts to recover. Premature exercise may bring on irremediable disease in the joint.

In general, sufficient force can be applied without applying any bandages upon the dislocated limb, either above the knee or ankle. One or two persons, by taking hold of the inferior extremity of the limb, can make force or extension quite sufficient.

### *On the Dislocation downwards, or in the Foramen Ovale.*

#### *Mode of the Accident.*

This accident happens when the thighs are widely separated from each other. The ligamentum teres and the lower part of the capsular ligament are torn through, and the head of the bone becomes situated in the posterior and inner part of the thigh upon the obturator externus muscle. The limb is in this case from two to three inches longer than the other. The head of the bone can be felt by pressure of the hand upon the inner and upper part of the thigh towards the perineum. The trochanter major is less prominent than on the opposite side. The body is bent forwards, owing to the psoas and iliacus internus muscles being put upon the stretch. The thigh is considerably advanced if the body be erect; the knee is widely separated from the other, and cannot be brought without great difficulty near the axis of the body to touch the other knee, owing to the extension of the glutei and pyriformis muscles. The foot, though widely separated from the other, is neither turned outwards nor inwards generally, although it varies a little in this respect in different instances; but the position of the foot does not in this case mark the accident. It is the bent position of the body, the separated knees, and the increased length of the limb, which are the diagnostic symptoms. (*See Plate.*)

#### *Reduction.*

This species of dislocation is very easily reduced. If the accident has happened recently, all that is required is to place the patient upon his back, to separate the thighs as widely as possible, and to place a bandage or girt upon the pudendum, or upper part of the thigh, fixing

it securely to the bedpost. The practitioner then puts his hand upon the ankle of the dislocated side, drawing it over the sound leg, and slips it into the socket. But, in general, it may be required to fix the pelvis, by a girt passed around it, and crossed under that which passed around the thigh, in order more firmly to secure the joint. (*See Plate.*) Care must be taken that there is not too much extension made.

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### *Of the Dislocation backwards, or in the Ischiatic Notch.*

#### *Nature of the Accident.*

In this dislocation, the head of the thigh-bone is placed on the pyriformis muscle, between the edge of the bone which forms the upper part of the ischiatic notch, and the sacro-sciatic ligaments, behind the acetabulum, and a little above the level of the middle of that cavity.

#### *Detection Difficult.*

It is the dislocation the most difficult, both to detect and to reduce : —to detect, because the length of the limb differs but little, and its position is not so much changed, as regards the knee and foot, as in the dislocation upwards : to reduce, because the head of the bone is placed deep behind the acetabulum, and it therefore requires to be lifted over its edge, as well as to be drawn towards its socket.

#### *Signs.*

The signs of this dislocation are, that the limb is about half an inch to one inch shorter than the other, but generally not more than half an inch ; that the trochanter major is behind its usual place, but is still remaining nearly at right angles with the ilium, with a slight inclination towards the acetabulum. The head of the bone is so buried in the ischiatic notch, that it cannot be distinctly felt, except in thin persons, and then only by rolling the thigh-bone forwards, as far as the comparatively fixed state of the limb will allow. The knee and the foot are turned inwards, but not nearly so much as in the dislocation upwards, and the toe rests against the ball of the great toe of the other foot. When the patient is standing, the toe touches the ground ; but the heel does not quite reach it. The knee is not so much advanced as in the dislocation upwards, but is still brought a little more forward than the other, and is slightly bent. The limb is fixed, so that both flexion and rotation are in a great degree prevented.

#### *Causes.*

This dislocation is produced by force being applied when the body is bent forward upon the thigh, or when the thigh is bent towards the abdomen, when, if the knee be pressed inward, the head of the bone is thrown behind the acetabulum.





No. 1.

FIRST. Dislocation of the Femur, or Thigh Bone, on the Illium.



*Diagnosis, or Symptoms.*

1st. The limb is one, or two, or two and a half inches shorter than the other.

2d. The toe rests upon the tarsus of the other foot; the knee and foot being turned inwards.

3d. The dislocated leg is nearly locked, admitting but of very little motion, but may be flexed, or bent, and brought across the other.

4. The head of the Thigh Bone may be felt, when motion of the limb is made, or when rotated inwards, except the swelling be too great. Again, it is less prominent than the other.



Reduction of the Thigh Bone, when dislocated, and thrown on the Illium.

No. 3.

SECOND. Dislocation downwards into the Foramen Ovale.



*Diagnosis, or Symptoms.*

1st. Instead of the limb being shorter, as in the last accident, it is two inches longer.

2d. The head of the bone can often be felt near the perineum.

3d. Less prominence, or more depression, than on the opposite side.

4th. The body is bent forwards.

5th. The knees are widely separated from each other.

6th. The foot continues pretty natural, neither turning outwards nor inwards.







Reduction of the Thigh Bone, when dislocated, and thrown into the Foramen Ovale.



No. 5.

THIRD. Dislocation backwards into the Ischiatric Notch.

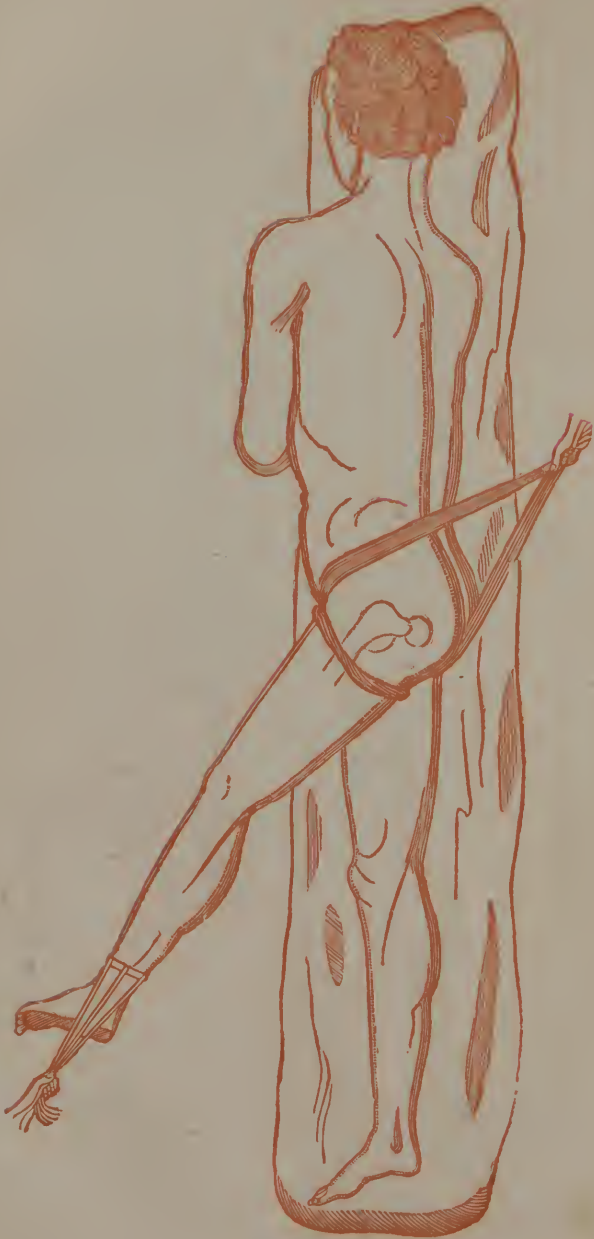


*Diagnosis, or Symptoms.*

- 1st. The limb is from half to one inch shorter.
- 2d. Foot and knee turned inwards, and the toe rests against the ball of the great toe.
- 3d. Little or no motion of the limb.
- 4th. When the patient is standing, the toe touches the ground, but the heel does not quite reach it.







Method of reducing a dislocation of the Thigh Bone, when thrown into the Ischiatic Notch.



FOURTH. Dislocation of the Thigh Bone, when thrown on the Pubes.

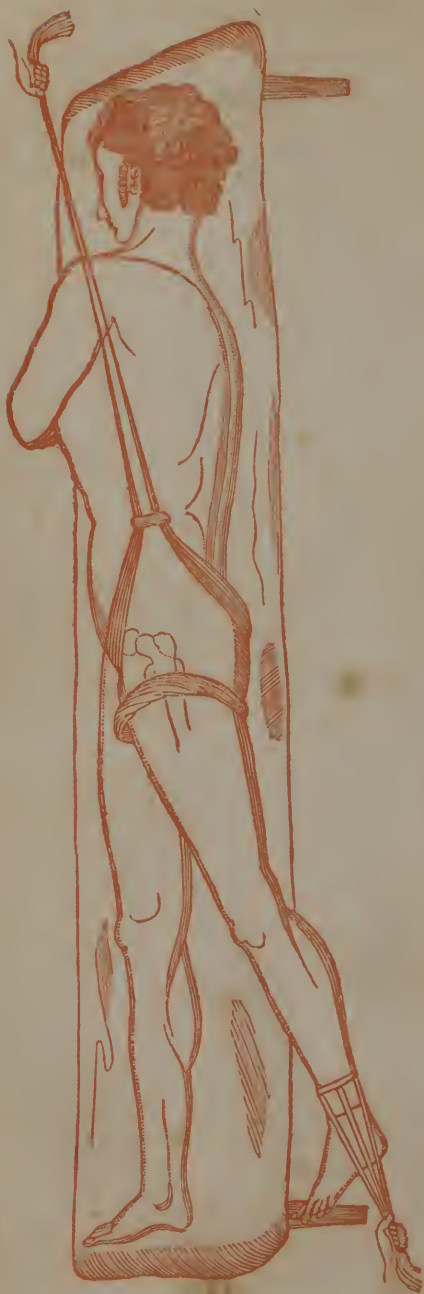


*Diagnosis, or Symptoms.*

- 1st. The limb is an inch shorter.
- 2d. The knee and foot turned outwards.
- 3d. The head of the bone may be felt upon the Pubes, near Poupart's ligament, which feels like a hard ball, and when the limb is bent, may be felt to move.
- 4th. There is a prominence at the Groin.







Reduction of the Femur, or Thigh Bone, when thrown on the Pubes.

*Reduction.*

The reduction of the dislocation in the ischiatic notch is generally more difficult than the other kinds of dislocation. A sheet or bandage must be placed in the groin, extending forwards, behind and before, across the hip, as directed in the other accident, and secured in like manner; and it may be necessary to pass a napkin or towel around the upper part of the thigh, in order to lift the head of the bone over the edge of the socket, or the acetabulum. Extension must be made across the opposite thigh, in the manner as before directed; after which, the reduction must be effected by the *compound movement* heretofore mentioned, or by *abduction, flexion and rotation*.

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*Of the Dislocation of the Pubis.*
*Cause.*

This dislocation is more easy of detection than any other of the thigh. It happens from a person, in walking, putting his foot into some unexpected hollow in the ground, and his body at the moment is bent backwards; the head of the bone is thrown forwards upon the os pubis. A gentleman, who had met with this dislocation in his own person, told me that it happened whilst he was walking across a paved yard in the dark, and he did not know that one of the stones had been taken up; his foot suddenly sunk into the hollow, and he fell backwards; and when his limb was examined, the head of the thigh-bone was found upon the os pubis.—(Cooper.)

*Symptoms.*

The limb is in this case an inch shorter than the other; the knee and the foot are turned outwards, and cannot be rotated inwards; but there is a slight flexion forwards and outwards; and, in a dislocation which had been long unreduced, the motion at the knee backwards and forwards was full twelve inches. But the striking criterion of this dislocation is, that the head of the thigh-bone may be distinctly felt upon the pubis, above the level of Poupart's ligament, to the outer side of the femoral artery and vein. It feels as a hard ball there, which is readily perceived to move by bending the thigh-bone.

*Reduction.*

In reducing this dislocation, extension and counter-extension must be made, as recommended in other dislocations, but in a different direction. It must be made in a line behind the axis of the body, so as to draw the thigh-bone backwards; and when such extension has been continued some time, a napkin or bandage is to be put under the upper part of the bone, and its head lifted over the pubis and edge of the socket. Flexion and rotation will likewise be necessary in this species of dislocation.

## SECTION X.

*Dislocation of the Knee-pan, or Patella.*

The patella may be luxated outwards, or even inwards, when violently pushed in this direction. It is also liable to a displacement upwards, in consequence of its ligament being sometimes ruptured by the action of the extensor muscles. The luxation outwards is the most frequent, because the bone more easily slips in this direction off the outer condyle of the femur than inwards. The bone is most frequently thrown on the external condyle, where it produces a projection; and this circumstance, with an incapacity of bending the knee, is evidence of the nature of the injury.—(*Surgical Essays*, part 1. p. 66.) The accident is most common in persons whose knees incline inwards; a circumstance that accounts for the tendency of the patella to be drawn outwards by the action of the extensor muscles. The dislocation inwards, which is much less frequently met with, is produced either by a fall upon a projecting body, which strikes the outer edge of the patella, or by the foot being turned inwards at the time of the fall.

*Reduction.*

Let the inferior extremity of the leg on which the knee-pan is dislocated, rest on the practitioner's lap, in order to flex the extensors of the leg; when the patella or knee-pan must be pushed upwards, or to its original situation. When reduced, let a bandage be placed around it. I lately reduced a very bad case of this kind, in the above manner, when other means were found unavailing.

*Dislocation of the Knee.*

The tibia may be luxated forwards, backwards, or to either side. As Boyer observes, complete dislocations of the upper head of the tibia are exceedingly rare, because the articular surface of the condyles of the femur is so extensive that the tibia cannot be entirely removed from it without a prodigious laceration of the ligaments, tendons, and all the rest of the soft parts.

*Reduction.*

Whenever the tibia is dislocated from the femur, the accident has generally happened either while some force was operating upon that bone, at a period when the femur was fixed and immovable, or else while the thigh-bone was propelled, or twisted with great violence, while the leg itself was firmly fixed.

These accidents are all most easily reduced by making gentle extension and flexion, and pushing the head of the tibia in the proper direction. The grand object, after the reduction, is to avert inflammation of the knee, and promote the union of the torn ligaments. The first demands the rigorous observance of the cooling plan—low diet,

opening medicines, and a cooling evaporating lotion ; both require the limb to remain perfectly motionless. As soon as the ligaments have grown together, and the danger of inflammation is over, which will be in about three weeks, the joint should be gently bent and extended every day, in order to prevent stiffness.

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### *Dislocation of the Ankle.*

Though the ankle is frequently dislocated, as a consequence of fracture through either malleolus, yet dislocation happens so rarely by itself, that it is hardly necessary to mention the possibility of its occurrence. This dislocation can be only backwards or forwards, and is reduced chiefly by coaptation.

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In concluding this Chapter on dislocations, I have to remark, that the practice recommended, of bleeding, with the use of antimony, &c., are very objectionable ; there is no necessity for either, in any case whatever, where the operation is properly conducted. Any dislocation can be reduced without resorting to them, or to inconvenient and complex pulleys.

As regards the different luxations of the hip-joint, I have preserved, according to custom, a discrimination both in theory and practice ; and some may suppose, at first view, that it is very difficult to reduce them ; but this is not the case. Without keeping in mind the nice distinction made in the different species or variety, any person can, with a little experience and judgment, effect a reduction without the least difficulty. The practical rules are the same in every accident. The practitioner has only to keep in mind the general principles of reducing dislocations, viz., by moderate extension and counter-extension, with flexion, rotation and abduction, and he will invariably succeed, where no insuperable obstacles present.



## CHAPTER VII.

### ULCERS.

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ULCERS on the legs, says a writer, form a very extensive and important class of diseases. The frequency of these complaints, and the pain and distress occasioned by them, make them often call for the surgeon's or physician's attention. The treatment of such cases is generally looked upon as an inferior branch of practice; an unpleasant and inglorious task, where much labour must be bestowed, and little honour gained. It is too often neglected in private and in hospital practice, or left to be negligently performed by unskilful hands. It ought, however, to be remembered, that more credit is due to the surgeon who saves one limb, than to him who amputates twenty; that dexterity in operating is only secondary in merit to skill in healing; and that an extensive cicatrix, or scar, is a more honourable trophy, than a well healed stump, or a wooden leg. Different opinions have been entertained respecting the best mode of managing these troublesome diseases. Dr. Cummings, an English physician, makes the following remarks on this subject.

"It is a lamentable fact, and much to be regretted, that the cure of ulcers is not well understood by practitioners in general; which is the more astonishing, as it is extremely simple. In private practice, there is not one medical person in ten, who knows any thing about it; and in the public service, if it were as well known as it ought to be, our hospitals would not so frequently be crowded with patients of this description; for my own part, I have been many years in the navy, and some in private practice, yet I never had occasion to send one to a hospital. Cast your eyes around you, and you will discover objects of misery in every part of the United Kingdoms, both rich and poor, who have suffered for years; nay, the greatest part of their lives, after having even consulted men who have been reputed clever members of the profession. A vulgar error has crept abroad, much indeed to the detriment of society, that healing such sores is attended with the most dangerous and fatal consequences, producing pains of the stomach, dyspepsia, &c. There are medical men, who, as a cover for their ignorance, have availed themselves of this language of *charlatanerie*, when they have found their efforts to cure ulcers unavailing.

"The fact is, that all the unpleasant symptoms so much dreaded, talked of, and so ill understood, do really affect the patient during the time that the ulcers are open; and the cause of this is no mystery. The irritation of the whole system, accruing from sores, renders the patient so extremely susceptible, and alive to such impressions, as would not, in circumstances of an ordinary good state of health, have produced any visible effect. Besides, absorption must, and very often does, take place, in ulcers that are not kept clean; hence arises that

swarthy, pallid, bombycinous countenance, which marks the looks of such people; hence, also, those stomachic complaints, and that debility, the never failing result of neglected, old and ill conditioned sores. My practice has fully and evidently demonstrated the fallacy of the above foolish notions, and the propriety of losing no time in healing ulcers, which occasion the evils I have just now mentioned. I have healed ulcers of twenty years' standing, and instead of suffering the host of evils which some of their sapient medical, and other acquaintances, had predicted, they were, contrary to their gloomy expectations, restored to a state of health, which they had long been strangers to, the comfort of which was greatly enhanced, from its not having been expected. Such has invariably been the happy consequence of every case which has been treated by me."

### *Description.*

Very different definitions have been given of the term ulcer, by different writers. But what in general seems to be understood by it is, a solution of continuity in any of the softer parts of the body, discharging either pus, sanies, or any other vitiated matter; and this, whether the complaint may have originally proceeded from an internal or an external cause.

Many writers, indeed, have confined the term to such sores as are the consequence of some internal disorder of the system. But in this they have certainly erred; for even the most simple wound, not in the least connected with any other disease, if it does not heal by what is called the first intention, without the formation of matter, must, in its progress towards cure, always end in an ulcer.

### *Different Species.*

1. The simple purulent ulcer.
2. The simple vitiated ulcer.
3. The fungous ulcer.
4. The sinuous ulcer.
5. The callous ulcer.

In the second class of ulcers, all such sores are meant to be included, as are the consequence of, or that are connected with, any disorder of the system: the different species of which are, the venereal, the scorbutic and scrofulous ulcers.

### *Causes of Ulcers in general.*

The causes which, in different circumstances, may give occasion to ulcers, are exceedingly various; but in general they are found, on examination, to arise from one or other of the following nature.

1. From such as may be termed, *occasional*, or *exciting causes*: of which kinds are wounds in general, bruises ending in suppuration, burns, and inflammation, from whatever cause it may have arisen, when it terminates either in gangrene or suppuration.
2. From such as with propriety may be termed *predisposing causes*: of which kind are considered, all disorders of the system in general,

attended with determinations to, or affections of, particular parts ; such as fevers of all kinds that terminate in what are called *critical abscesses* ; also, lues venerea, serofula and seury.

3. Ulcers may proceed from a combination of the two foregoing causes. Thus, a slight scratch, or excoriation, that in a sound constitution would heal without any trouble, in a habit tainted with any of the above-mentioned disorders, will frequently produce a very disagreeable and tedious ulcer.

### 1. *Simple Purulent Ulcer.*

By the simple purulent ulcer is meant, that species of sore which is apparently a local affection, and is attended with a very inconsiderable degree of pain and inflammation, whilst the discharge afforded by it is always of a mild, purulent nature, and of a proper consistence.

### 2. *Simple Vitiated Ulcer.*

The most common appearances in the matter afforded by ulcers, when it deviates from the more natural state of purulent matter, are,

1. A thin, limpid, and sometimes greenish discharge, termed *sanies*.
2. A somewhat red-coloured, thin, and generally very acrid matter, termed *ichor*.
3. A more viscid, glutinous kind of matter, called *sordes*.

### 3. *Fungous Ulcer.*

By the term fungous is understood, such preternatural risings of the parts, in sores, as are commonly more soft and spongy than sound, healthy granulations ; which, though they do not in general acquire any great degree of bulk, yet, by a very long continuance and neglect, they do, in some instances, arrive at very considerable sizes : and although, as we have observed, they are generally at first lax and soft, yet, when of long duration, they likewise, in some cases, acquire very great degrees of hardness.

The pain attending them is not commonly considerable ; though, in some instances, it is otherwise ; and the discharge afforded by them varies according to the species of ulcer they happen to be connected with.

### 4. *Sinuous Ulcer.*

By the term sinuous ulcer, is meant that species of sore communicating with one or more openings or cavities of various sizes and dimensions, which are generally seated in the cellular membrane, between the common teguments and muscles, or between the interstices of the muscles themselves.

These different sinuses serving as reservoirs both for the matter formed in the body of the sore, and for that which is afforded by the sides of their own cavities, make the discharge of all such ulcers, when the matter of the sinuses is pressed into them, appear to be much more considerable than their extent of surface would give cause to expect.

5. *Callous Ulcer.*

An ulcer is said to be callous, when its edges, instead of contracting, and diminishing the size of the sore, keep at a stand, turn ragged, and, at last, by acquiring a preternatural thickness, often rise considerably above the level of the neighbouring parts: and, as it is generally from neglect or improper treatment that ulcers do turn callous, the discharge afforded by them is commonly a thin vitiated matter.

It is in this species of ulcer chiefly, too, that varicose veins occur as a symptom, especially when the complaint is seated in the lower extremities. This seems to be owing, not only to the difficulty the blood, in such situations, meets with in its return to the heart; but, in a great measure, to the stricture occasioned by the callosities on the course of the different veins; a circumstance which, in extensive sores of this kind, must, no doubt, have a considerable influence.

*Treatment of Ulcers in general.*

The first great indication in the treatment of ulcers in general, is to subdue the inflammation (when it exists) with which they are attended. This is best accomplished by the application of our *common poultice*. The *slippery elm bark* is the principal article on which we depend to fulfil this indication, although much depends upon the agents or the liquids with which it is combined. In obstinate cases, where the simple poultice is insufficient to remove it, let the powdered bark be stirred into a strong decoction, of the external or cortical part of the *wild indigo* root, sassafras, beer, &c. (*podolyria tinctoria*.) The sassafras, weak ley, or beer, to be used in succession, or alternately, as occasion may require. Another very excellent poultice to reduce inflammation, is made by mixing the pulverized bark of *rose willow*, (by some called pussy willow,) with cream, milk or butter-milk. This is the article so universally employed by a Doctor Bone, of New-Jersey, who has become so celebrated for the cure of ulcers. These applications, particularly the first, must be kept upon the ulcer until the inflammation is reduced, or nearly so. If it fail, apply the others. When the ulcer is characterized by fœtor or sloughing, the *elm bark* should be mixed with *yest* and milk, which will soon change the appearance of it. The next object is to excite in the ulcer, what are termed healthy granulations, or the healing process; to effect which, such applications must be made as will prevent the rising of fungus, or *proud flesh*, as it is termed, and, if it has already appeared, to remove it. For this purpose, every time when the sore is dressed, let it be washed or properly cleansed by *Castile soap* and soft water, which is well incorporated or mixed together, to which a small quantity of spirits has been added. After a little time has been given for evaporation, let the surface of the ulcer be sprinkled with finely pulverized, or levigated powder of *blood root*, (*sanguinaria Canadensis*.) This powder is mildly stimulating, and is calculated to keep down unhealthy granulations, and will often remove them after they have become very troublesome. After this powder has been applied, let the ulcer be covered with linen lint. This not only acts



as a stimulant to the parts, but is very serviceable in absorbing the discharge from it. In the next place, spread the *black salve* or *plaster* thin on a piece of linen, and let it be placed, not only over the sore, but a little distance around the margin of it. Lastly, a roller, or bandage, may be applied around the dressings, particularly in such cases where it is admissible. Quietness and rest should now be enjoined, as much exercise retards the cure.

This treatment, in general, will heal all ordinary ulcers, and often those that are very inveterate; but some of them, from various causes, from long standing, from bad management, from a taint of the system, assume a very indolent, obstinate, and intractable character, and are abandoned by the faculty as incurable.

Such ulcers require some variation in the treatment. In addition to the course recommended, it will be proper to use more active means, to excite in them a new or healthy action. For this purpose, it will be necessary (if the above means do not prove effectual, after a reasonable time) to sprinkle the ulcer every day with the *vegetable caustic*. This is a peculiar preparation, different from any other with which I am acquainted. Although it acts as a powerful stimulant for a few minutes, changing both the appearance and discharge, and acting as an *escharotic* or *caustic* upon fungus or unhealthy granulations; yet, striking and unaccountable as the fact is, so far from exciting any additional inflammation, it absolutely removes it. It should be recollected, that the article must be kept from the air, as exposure to it destroys its active properties. This will be found a powerful auxiliary in the cure of ulcers; but there are some which require even different applications to remove them; and after using this, or dressing them in this manner, for a number of days or weeks, should the ulcer become stationary, apply the following plaster:

Take *white-oak bark*, a proper quantity, bruise or grind it; add urine, a sufficient quantity to cover it; let it stand two or three days, and then boil it till it becomes of the consistence of thin molasses; add to every five pounds of this, one pound of *honey*, and one pound of *gum turpentine*, which has been melted and strained; let the whole be simmered a short time over the fire, to incorporate or mix it. Let this be placed upon a piece of linen, and applied once a day, in place of the black or healing salve; and should fungus or proud flesh appear in the ulcer, after using it a few days, add one drachm of *white vitriol*, pulverized, to every ounce of the extract. This preparation alone has cured many very obstinate ulcers, even where they assumed a cancerous character. Should it excite any pain, or too much inflammation, it may be applied during the day, and a poultice at night; and this is applicable to the other dressings.

In certain cases, the *wild indigo* salve, or plaster, answers a better purpose than any other application.

Take *wild indigo*, the bark from the roots, 1 bushel; boil till the strength is out; then strain, boil and skim; add fresh butter 10 lbs., beeswax 3 lbs., mutton tallow 1 1/2 lbs.; simmer till the water has evaporated, or is out; then strain and skim again. The blue flag roots, is sometimes added. To be applied once or twice a day, the same as the preceding plaster.

In treating ulcers in general, the practitioner will find it advantageous to be acquainted with the effects of a great many external applications ; for very few cases will continue to heal beyond a certain time, without some alteration in the treatment. The necessity of changing the applications, after they have been continued for a certain time, is strikingly illustrated by the fact, that leaving off a powerful application, and employing one which at first would have had no effect, often does a great deal of service. When the change is made to a medicine of powers equal to those of the previous one, the benefit will be more lasting than in the preceding circumstance.

The following combination forms an excellent plaster in inveterate cases of ulcers, where other means fail :

Take extract of *blood root*, inspissated juice of *poke-berry*, extract of *yellow dock*, equal parts, mix, spread upon a piece of linen, and apply the same as the other plasters.

There is one application which I have been in the habit of using for many years, as the dernier resort, or as the last alternative, and which has proved a remedy, in conjunction with the treatment first recommended for ulcers, when all other means have failed. It is seldom, however, necessary to resort to it ; and, being a mineral preparation, although used externally, is not so desirable as vegetable agents. I allude to the *mineral caustic*, one of the most powerful and active preparations that we make use of. A few grains sprinkled upon an ulcer, corrodes either the healthy or unhealthy parts. It is best to commence by using a very small quantity first, about once or twice a week, only sufficient to produce a preternatural or greater discharge of matter from the ulcer, for this is the only rational indication in curing it. Nature makes a great effort to remove the morbid, or diseased action, by establishing a drain, or issue, upon the very part diseased, and all the physician can do, or ought to do, is to aid her salutary efforts, by making an issue directly upon the ulcer, in order to remove the offending cause. The healing process is exclusively the business of nature ; and therefore this and other applications should be occasionally applied, to keep up this preternatural discharge, until the exciting cause of the disease is removed, or a healthy action brought about.

After such discharge has been kept up a reasonable time, the applications may be discontinued, and the simple dressing used alone, such as the black, or healing salve, and lint. This is necessary, to give an opportunity for the healing process to take place, as an ulcer cannot always heal, or fill up, while under the influence of corrosive or irritating agents. The greatest caution and circumspection must be used in applying the mineral caustic. There is no danger arising from absorption of it into the system ; but if too great a quantity of it is applied, it causes much pain and inflammation. It usually acts with considerable violence for six or twelve hours, after which it subsides ; and if much is used, an eschar is formed, which requires the *elm bark* and *yest* to separate it ; but in general it is best to apply only a few grains, or such a quantity as will not form an eschar, but merely keep up a little greater discharge than has ordinarily been, before any thing was applied to the sore.

The late Dr. Ferris, a root, or botanical doctor, states, that the *shrub maple*, or *cavern wood*, applied to ulcers, in the form of decoction, is an infallible remedy ; but I have never used it, not having been able to ascertain its true botanical character.

I lately saw a most inveterate ulcer cured, by a botanic physician, of the name of Galloway, by applying a strong decoction, made of the *chestnut* leaves, several times a day.

In what are termed *fever sores*, and which are exceedingly obstinate, and are usually attended with considerable swelling, I have fomented, or steamed the part, once or twice a week, over *bitter herbs*, such as *tansy*, *wormwood*, *horehound* and *catnip*, and have occasionally applied cups around the sore, and on the leg.

In some ulcers, which have baffled the skill of all physicians, I have found the application of an ointment made to them, of the following plant, prove a sovereign remedy :

Take *sweet*, or *Scnecca clover*, bruise and simmer it, with fresh lard, until the strength is extracted ; then strain, spread upon linen, and apply it. One of the worst cases that I ever beheld was cured by this simple application alone ; it seemed to exert a specific effect, different from any other article.

As regards the frequency of dressing ulcers, this must depend on circumstances : such as the fetor arising from them, the discharge, &c. As a general rule, they should be dressed morning and night. This treatment is applicable to all kinds of ulcers, except such as are termed sinous, or where there is one or more openings, or orifices, communicating with the ulcer to the adjacent parts.

It is necessary, in ulcers of this kind, daily to inject into the orifices some stimulating liquid. A solution of the *vegetable caustic* is excellent, as it destroys unhealthy granulations, without producing inflammation. A drachm, or teaspoonful, of the powders may be dissolved in a teacupful, or eight ounces, of a strong decoction of the *wild indigo*, or, as a substitute, water. If this should prove insufficient properly to cleanse and heal them, inject in a decoction made by boiling *blood root*, *sumac bark* and the bark of *bitter sweet*. *Soap suds* (soap and water) is also very good for this purpose, and also tincture of *gum myrrh*. I have been in the habit, occasionally, of dissolving ten grains of the mineral caustic in eight ounces of water, and injecting this once a day, in order to keep these sinous ulcers open. It is sometimes necessary to introduce teuts into them, made of the ravelings of linen, twisted hard, or short pieces of twine drawn through the black salve, or beeswax ; and where they prove insufficient to keep the orifice of the ulcer open, they may be rolled in the vegetable caustic, and, should this prove insufficient, a few grains of the *mineral caustic*.

A vast number of applications have been recommended for the cure of ulcers ; but I have seen very little good result from any of them, except those which I have recommended.

Tight bandaging has been highly extolled, and is now practised by many ; but I have very little confidence in it, except as an auxiliary.

*General or Constitutional Treatment.*

In slight, or healthy ulcers, it is not necessary to resort to much, if any, internal medicines; but where they are protracted, and assume an obstinate, or inveterate character, without attention to constitutional treatment, all local applications will seldom be sufficient. The general secretions of the system must be attended to.

*Purgatives*, consisting of our common physic or mandrake, should be given as often as once a week. The skin must be kept moist, and an alterative course pursued.

Ulcers often depend upon some morbid taint of the system, and it therefore becomes necessary to remove the cause before the effect will cease. I have found no preparation so valuable, in correcting an impure state of the blood, as the *alterative syrup*. It should be taken regularly, and should be continued until the ulcer has healed. The following medicine, or beer, may be taken at the same time, with advantage:—take sassafras root, black alder, burdock root, wild cherry tree bark, q. s.; cut or bruise them; add sufficient water to make a strong decoction, sweetened with honey, or molasses; then add sufficient yeast to ferment it. Drink freely through the day.

*Regimen.*

No ardent spirits must be drank, and the diet must be light and nutritious. Too much exercise must be avoided; the more quiet the patient keeps, the more favourable will it prove.

This is the course of treatment which I have found to exceed any other; and it has proved a sovereign remedy in every species of ulcer, without reference to the length of time it has existed, age or habit, even where they have been abandoned as incurable by our most popular surgeons, and where amputation has been proposed.

I have deemed it unnecessary to treat the different species of ulcers under distinct heads, as almost every kind requires a similar course. Where any difference is required, it has been pointed out.

The bone is often affected in some description of sores, which calls for a different course to be pursued, and which will be given under the head of *necrosis*. *Scrofulous*, *venereal* and *cancerous* ulcers will be treated under their respective heads.



## CHAPTER VIII.

### NECROSIS—CARIES—(*Diseased Bones.*)

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THE bones of the body, as well as the soft parts, are liable to be attended with inflammation, ulceration and exfoliation. They are composed of arteries, veins, absorbent vessels, nerves, and a cellular texture; they are endued with vitality; they are nourished; they grow, waste, are repaired, and undergo various mutations, according to the age of the individual; and they are subject to diseases analogous to those of the soft parts. To the phosphate of lime, which is more or less abundantly distributed in their texture, they owe all their solidity; and perhaps it is to the same earthy substance, that the difference in their vital properties, and in their diseases, from those of the rest of the body, is to be referred. In fact, this particular organization and inferior vitality of the bones are generally supposed to account for the small number, peculiar character, and generally slow progress of their diseases.

It is customary for writers to make a distinction between necrosis and caries; but I can see no good reason for this distinction, as they may, with propriety, be said to be one and the same complaint. The appearances to be observed, depend more upon the stage of the disease, than upon any other cause. The treatment, also, is very similar. The following is the distinction made by writers:

In necrosis, the bone is entirely deprived of life; in caries, the vital principle exists, but a morbid action is going on, whereby the texture of the bone is altered, and rendered softer and lighter than natural. But, though these disorders are thus far different from each other, they frequently occur together in the same part; and the term seems proper only to express a difference in the stage of the complaint.

The tibia, femur, lower jaw, clavicle, humerus, fibula, radius, and ulna, are the bones most frequently affected with necrosis. Excepting the lower jaw and scapula, the process of regeneration has only been noticed in the cylindrical bones. From twelve to eighteen years of age is the time of life most subject to necrosis. Necrosis of the lower jaw, however, seldom occurs before the age of thirty.

No climate, age, sex, mode of life nor condition, (says Weidmann,) is exempt from this disorder. Childhood and puberty, however, are the periods most liable to it. The same thing may be said of persons who labour hard, and are much exposed to external injuries. Every bone of the human body is subject to necrosis; but those which are superficial, and enter into the formation of the extremities, are more frequently affected than others whose situation is deeper. Necrosis less commonly attacks the spongy substance of the bones, because, this being endued with a higher degree of vascularity and life, sup-

puration is most apt to occur. Necrosis, on the contrary, is oftener seen in the compact substance, where the vital principle is less energetic, and more readily extinguished. As a modern writer has remarked, a very slight injury will frequently occasion an extensive exfoliation from the surface of the cylinder of a long bone; but a musket-ball may pass through the cellular structure of an epiphysis, or lodge in its substance, without giving rise to necrosis—suppurative inflammation being much more likely to occur than the latter affection.—(*Bell, on Diseases of the Bones, &c.* p. 49.) Lastly, necrosis may affect the long bones or the broad, the large or small, and even those of the very least size.

Though necrosis mostly attacks the cylindrical bones, the flat ones are not exempt from the disease. Indeed, almost every bone in the body is subject to caries or necrosis. I scarcely recollect a bone which I have not seen diseased, and which, I may add, I have not successfully treated.

#### *Causes.*

The death of bones usually proceeds from inflammation; and this may be induced by various causes, such as cold, injuries, and especially the use of mercury, and the venereal disease.

The causes of necrosis are not essentially different from those which produce ulcers and gangrene of the soft parts. As, however, the vitality of the bones is weaker, we may infer, that necrosis may be occasioned in them by causes which are less numerous and intense, and such as would only give rise to suppuration in the soft parts. Every thing, whether in the periosteum or the substance of the bone itself, that tends to interrupt the nutrition of the bone, must be regarded as conducive to the origin of necrosis. It is observed, however, that when the mischief in the periosteum, medulla, or substance of the bone, is of trivial extent, the consequence is merely an abscess. Some of the causes of necrosis are *external*, while others are *internal*, or constitutional. Sometimes, the life of the bone is instantaneously destroyed by them; but, in other instances, the bone is first stimulated and enlarged, so that its death is preceded by true inflammation.

The external causes which injure the periosteum and medullary structure, and thus produce necrosis, are wounds, contusions, pressure, fractures, comminutions, acrid substances, caustics, and extreme degrees of heat or cold.

When the periosteum, in consequence of an external cause, inflames and sloughs, or is at once deprived of its vitality, as it may be by the action of caustic, fire, or intense cold, the vessels which conveyed nourishment to the bone are destroyed, and the death and exfoliation of the denuded portion of the bone are inevitable. But if the detachment of the periosteum is of little extent, the patient young and healthy, and the treatment calculated to prevent inflammation, and preserve uninjured the vessels distributed to the bone, hopes may be entertained, that no part of the bone will die, but that granulations will very soon arise from its surface, being adherent to it as the periosteum was, and that they will grow to, and heal with, the surrounding parts.

*Symptoms.*

The inflammation, arising from the causes which excite necrosis, may be either *acute* or *chronic*. It is *chronic* when it begins and passes through its different stages slowly, and when the mildness of the symptoms may lead us to mistake the nature of the case. This sort of inflammation chiefly happens in debilitated constitutions, in which the necrosis only affects the external part of a bone, and originates from some chronic cause, such as scrofula, lues venerea, and the scurvy. But when necrosis attacks the interior, and the disease occurs in a strong, irritable, plethoric subject, inflammation is immediately kindled, attended with the most acute symptoms, severe pain, considerable fever, restlessness, delirium, &c. Chronic inflammation is more supportable; but its duration is longer: acute inflammation is more afflicting; but sooner comes to a crisis.

The part in which a necrosis is situated is affected with swelling. What has been observed respecting the inflammation, is also applicable to this tumour, which most frequently forms gradually, but sometimes with great rapidity. In the first case, the accompanying pain is dull and inconsiderable; in the second, it is violent. The swelling has not, like that of abscesses, an elevated apex. On the contrary, it is so widely diffused, that the limits which circumscribe it can hardly be distinguished.

This diffusion of the swelling is the greater in proportion as the diseased bone is more deeply buried in soft parts: it may extend over the whole morbid bone, or even over the whole limb.

The swelling comes on at the very beginning of the disorder, and continues to increase until the matter which it contains finds its way out, when the evacuation is followed by a partial subsidence of the tumour. The swelling is sometimes watery, especially in persons whose constitutions have been impaired by the severity of the disease, the violence of the sufferings, and the long and profuse discharge.

When the inflammation is acute, purulent matter of good quality soon collects in the vicinity of the necrosis. In the contrary case, the pus forms slowly, and is thinner and less healthy.

The abscess which accompanies a necrosis, naturally soon bursts, when it arises from intense inflammation, and is situated near the skin, which is itself inflamed. But when the bone is surrounded by a great thickness of soft parts, and the inflammation is chronic, the quantity of matter daily increases, the cavity which it occupies becomes larger and larger, and considerable pressure is made by the abscess on every side. The bones and tendons resist for a long while the progress of the matter; but the cellular substance yields, and different sinuses form, which sometimes run to a vast distance from the main collection of matter.

It was supposed, a few years ago, that in cases of necrosis, the matter was invariably sanious, acrid, and fetid. But the celebrated Wiedmann exposed the error of this opinion. He had often seen abscesses and ulcers, arising from necrosis, discharge a whitish, inodorous, thick pus, absolutely devoid of any bad quality whatsoever. He

had particularly seen this happen in patients whose necrosis proceeded from an external cause, or an internal one of a slight nature, and whose health was generally good.—(*De Necrosi Ossium*, p. 16.) If, says the same writer, we sometimes find in practice the suppuration dark and fetid, we must not ascribe it to the affection of the bone, but to the weakness and bad state of the patient's health. Under the same circumstances, common sores of the soft parts would also emit a discharge of bad quality.

After the ulcerated openings have emitted for some time a profuse discharge, the sinuses, if considerable, receive the appellation of fistulæ, on account of their edges putting on a callous appearance, throwing out fungous granulations, and there being impediments to healing. These impediments are caused by the dead portions of bone, which, whether loose or adherent, act as extraneous bodies in hindering the sores from healing. In some instances, also, the ulcers will not heal, though the dead bone has come away, because they run to a great depth, and such a quantity of pus is secreted from every point of their surface as prevents all contact, and the adhesions which would result from it.

The fistulæ vary in number; but they are fewer in proportion as the disease is slighter. In an extensive necrosis, several of these openings are seen, either near together, or separated by considerable spaces; and when the necrosis affects every side of the bone, the fistulæ in the integuments occur on every side of the limb.

Besides the inflammatory fever which attends the beginning of every severe case of necrosis, which is sometimes accompanied with exceedingly violent symptoms, and which usually abates when matter is formed, the patient is subject to another fever, of a slow, hectic type. This takes place in the decline of the disease, is the effect of the long-continued profuse suppuration, gradually reduces the patient, and at length brings him to the grave, unless the timely removal of the bone be effected either by nature or art.

Let us next endeavour to trace the signs by which we may not only ascertain the presence of the disease, but its modifications.

In the first place, we should make ourselves acquainted with every thing which may have predisposed to the disorder; as, for instance, what accidental circumstances have occurred, and what symptoms followed them. We should also inquire into any previous treatment which may have been adopted; for, as Wiedmann truly remarks, injudicious remedies have caused many a necrosis that would not have occurred at all if the case had been properly treated or confided to nature.

The kind of inflammation with which the disease commences, may afford grounds for suspecting that necrosis will happen: it is generally slow and deeply seated, passing through its stages tardily, and the attendant symptoms are severe. The skin retains its natural colour a long while; but at length exhibits a reddish or livid discoloration. The matter does not reach the skin till a considerable time has elapsed, and when the abscess bursts, the inflammatory symptoms are still slow in subsiding. When the inflammation is acute, the patient suffers intolerable pain a long time.



There are also other symptoms of a necrosis ; viz., the swelling which accompanies the inflammation is situated upon a bone, or rather the bone is included in the tumour ; the swelling is at the same time very diffused, and the suppuration lies deeply, and can only be felt in an obscure way.

The ulcers, beneath which a necrosis is situated, discharge a large quantity of matter, and their edges are bent inwards. The granulations are either yellowish and pale, or else of an intense red colour ; they are also irregular, and generally not very tender, though sometimes extremely painful, and on being slightly touched they bleed.

It has been already noticed, that some years ago the discharge from the sores which attend necrosis was described as being always thin, fetid, and sanious ; and such qualities of the matter were regarded as a symptom of the disease of the bone. But, as Wiedmann has explained, it is a symptom undeserving of confidence. In necrosis, the pus is often thick, white and inodorous ; while other ulcers, unattended with diseased bone, sometimes discharge thin fetid matter. Wiedmann, at the same time, does not mean to assert, that in necrosis the sores never emit unhealthy pus ; but he firmly believes, that such discharge is not always the result of a disease of the bone. As far as he could judge, the suppuration from ulcers situated over diseased bones, continues white and laudable as long as the patient's general health is good ; but that it deviates from these properties in proportion as the health becomes impaired.

Neither is the black colour imparted to the dressings of ulcers a circumstance which necessarily indicates the existence of necrosis ; for it may occur when the bone is sound, and may not happen when the bone is affected.

None of the preceding symptoms convey such information as leaves no doubt of the positive existence of necrosis. The touch is the only thing which can give us this knowledge, when the bone is not too deeply situated, and the sinuses not tortuous, nor obstructed with fungous growths.

When the openings of the ulcers are considerable, the finger may be introduced. If in this way the bone can be felt to be extensively uncovered by the periosteum, the surgeon may conclude that all such portion of the bone has perished. He may be still more certain of the fact, when he finds the edges of the denuded bone unequal and rough.

The examinations made directly with the finger, give the most correct and exact information of the state of the bone ; but the orifices of the sores are sometimes so small, that the finger cannot be introduced without causing great pain. A probe must then be used, for the purpose of ascertaining the extent of the denudation of the bone ; whether its edges are rough ; whether the dead portion is loose, and likely to separate soon.

Sometimes the dead fragment of bone protrudes from the ulcer, or is visible on separating its edges. When it is black, there cannot be a doubt of its being actually dead ; but, on the other hand, when its whiteness is increased, the diagnosis is difficult, because, bones being

naturally white, much experience is necessary to be able to judge whether they are so in excess.

It merits attention, also, that the black colour of the bone is not owing to the necrosis itself, but seems rather to depend upon the fragment having been exposed to the air. In fact, dead pieces of bone with which the air comes into contact turn black, while those which are covered with matter retain their whiteness. The cylindrical portion of a humerus, which was almost totally affected with necrosis, was universally black at the part which protruded through the flesh; but the rest, which lay under the integuments, was white. (*Wiedmann, de Necrosi Ossium*, p. 19. et tab. 9. fig. 1.)

When the early symptoms of the disease are mild, the surgeon may infer that it is only a superficial portion of the bone which is about to be separated. But this judgment will be more certain if confirmed by examination with the finger or probe; or if the swelling which occurred in the beginning has not spread beyond the affected point, and if the pain affects only the outer part of the bone. In this sort of case there is also great probability that the dead bone will be separated within a moderate time.

It is also of importance to ascertain the existence of an internal necrosis, and to learn whether it is situated in the spongy substance, or in the internal parietes of the canal of the bone; whether it affects only a part, or extends to the whole body of the bone. When there is an internal necrosis, says Wiedmann, the disease is generally more aggravated, and of longer duration; and in the first stage the patient is affected with severe symptoms, intolerable pain, loss of rest, a great deal of fever, profuse perspirations, and such disorder of the system as may prove fatal, unless the patient be young and strong. The hard swelling which was observable at the commencement of the disease, increases but slowly, and extends very gradually over the circumference of the limb, while the skin yet remains free from redness and tension. *If the part be somewhat roughly handled, the pain which is fixed in the bone is not rendered more acute, as would happen were the case an external inflammation.* In this suffering condition the patient continues a good while before the formation of matter brings a degree of relief. When the matter is formed, it spreads through the adjacent cellular substance, among the muscles and other parts, and the abscess generally bursts, after a considerable time, by several openings very distant from the main collection of matter, as also remote from each other, sometimes in diametrically opposite situations. The evacuation of the matter, however, does not produce any material subsidence of the swelling. The pus is of good quality, and issues in large quantities from the ulcerated apertures, *the quantity, however, not being increased when pressure is made.* If some of the openings heal, others are formed; but, in general, the edges become callous, and they lose all disposition to heal. When the case presents the foregoing circumstances, and the weakened limb can neither bear the action of the muscles nor the weight of the body, and by either of these causes its shape becomes altered, the surgeon may conclude that the disease is an internal necrosis. But in order to avoid mistake, he should introduce into the sinuses a probe, which, passing

through the openings in the subjacent bone, will touch the dead piece which it contains, and which will sometimes be even distinguished to be loose and movable. *The extent of the sequestrum, or dead bones, must be judged of by the extent of the swelling, and the distances between the apertures in the bony shell which includes them.*

The practitioner should also endeavour to ascertain with the probe whether there is only a single sequestrum, or several. When there are several, they may be felt with the probe in different places, down to which this instrument is passed, and the removal of one or two of the fragments is not followed by a cure. It ought to be remembered, however, that the same fragment may be touched by the probe in several different places when it is very extensive. If there are several dead pieces of bone situated at a distance from each other, each of them is generally accompanied with a distinct swelling and sinuses. Frequently these fragments are so concealed that they cannot be felt with a probe; but their existence may then be suspected, from the ulcers not healing, which can be ascribed to nothing else.

It is also necessary to distinguish, with the greatest attention, the different stages of the disease. The *first stage* may be considered as existing when the attack is yet recent, and the inflammation and its concomitant symptoms, the pain, swelling, and symptomatic fever, prevail in a high degree, and when no suppuration has taken place, or at least no discharge of matter. The *second period*, in which the dead bone is undergoing the process of separation, is indicated by a diminution of the inflammation, a partial subsidence of the swelling, and the discharge of purulent matter. When a probe is passed into the ulcers, the bone is felt bare and dry, and towards the limits of the swelling it is rough, where, as will be afterward noticed, an excavation is formed. Every part of the bone, however, which is to be detached, still continues adherent to the rest of the living bone. At length the surgeon knows that the disease has reached its *last stage*, or that in which the dead portion of bone is entirely separated, when sufficient time for the completion of this separation has transpired, and when the dead bone can be distinguished with the finger, probe, or even the eye, to be loose and free from all connexions.

### *Prognosis.*

In general, the most difficult cases of necrosis may be cured by proper treatment.

### *Common Practice.*

This is very various; there being little or no uniformity about it. Some divide the integuments, and take out the decayed bone with the saw. Some use the trephine; some use acids, mercury, red hot iron, rasping or scraping the bone, &c.

### *Reformed Practice.*

*Indications of Cure.*—In the treatment of necrosis, the first grand object of the practitioner should be, to aid nature in her endeavours



to effect a cure, and not disturb her operations by any superfluous or unseasonable interference. The second should be to assist her sometimes by the boldest proceedings, when she loses her way, and cannot, by herself, accomplish what is necessary.

But in order not to attempt any thing wrong, the practitioner must understand correctly what nature does in this disease; what it is in her power to perform; what she either cannot accomplish at all, or not with any degree of certainty; and, lastly, the circumstances in which she may be insufficient, and endanger the patient's life.

When a portion of bone dies, nature uses all her endeavours to bring about its separation from the part of the bone which still remains alive. This process is termed *exfoliation*, which resembles the separation of parts affected with gangrene or mortification, from the living flesh. The exfoliation of bone, however, happens much more slowly than the separation of a slough of the soft parts. Neither are all exfoliations completed at a regular period; for they proceed most quickly during youth, when the constitution is usually more full of energy, the bones more vascular, and less replete with solid, inorganic, earthy matter. On the other hand, the process is slower in old, debilitated subjects, whose vitality is less active. A thin small seale of bone separates sooner than a large thick portion; and the most tedious exfoliation is that of a thick bone, from which a portion, including its entire diameter, is coming away. The separation of a necrosis takes place more expeditiously in bones of a light texture than in those of a solid structure; and sooner in the less compact parts of bones.

When a necrosis has originated from the scurvy, syphilis, &c., and appropriate remedies are not administered, nature cannot effectually accomplish the process by which the dead bone is separated; the case becomes worse, and life endangered.

The separation happens precisely at the different parts where the living and dead parts of the bone come into contact; and it is obvious, that the particles of the dead bone, which are at a distance from the part that retains its vitality, cannot be acted upon by it.

A variety of opinions have been entertained concerning the means employed by nature in effecting this separation. Hippocrates believed that the dead part was pushed away by a fleshy substance which grew underneath it.—(*De Cap. vuln.* cap. xxiv.) Ludwig, Aitken, Bonn, and many others, adopted the same idea.—(See *Adversaria Med. Pract.* vol. iii. p. 63. *Systematic Elements of Surgery*, p. 287. *The-saur. Oss. Morb.* p. 1.)

Van Swieten conceived that the dead part was forced away by the incessant beating of the arteries.—(*Comment. in Aphor. Boerrhavi*, sect. 252.) M. Fabre ascribed the separation to the extension and expansion of the vessels.—(*Mem. de l'Acad. de Chir.* t. iv. p. 91.) Others supposed that the exfoliating piece of bone became loosened, partly by the suppuration, and partly by the rising of the new granulations.—(See *B. Bell on Ulcers*.)

In the treatment of a diseased or decayed bone, we must condemn every mode of treatment which is inefficacious, very painful or severe, and we must make use of all those means which are consistent with



the views of nature, which really assist her, and do not tease the patient to no purpose. In short, the indications are limited to removing the original cause of the disease ; to alleviating the symptoms ; to supporting the patient's strength, and improving the state of the constitution, in whatever respect it may be bad ; and, lastly, removing the dead portions of bone when they become loose.

Necrosis may often be prevented by making use of judicious means to reduce the inflammation which is a forerunner of it ; and this object should always be kept particularly in view ; and, to accomplish which, both internal and external remedies are called for, and such as have been recommended under the head of inflammation. The part inflamed must be daily fomented with bitter herbs, and the common poultice must be applied. When suppuration takes place, or has already taken place, the abscess should be kept freely discharging, and continued as open as possible by proper applications.

When we have ascertained that the bone is actually dead, which, in general, may be known, either by the appearance of the bone itself, or the rough sensation communicated to the probe, it will be necessary to aid the efforts of nature, by exposing as much of the surface of the diseased bone as can be done without too much disturbing her operations. For this purpose, some recommend very violent means, such as dissecting the flesh or integuments from the bone, and sawing it off ; but this is not calculated to effect a cure, for obvious reasons. Nature requires just such a process to separate the dead from the living bone, and all that art can do is to imitate her.

Some, also, recommend the application of a trephine, to bore down through the carious bone to the medullary portion of it. The late Dr. Smith, of New-Haven, very highly extols this method. But, after giving it a fair trial, I must state, that I have not a very favourable opinion of its efficacy.

A common error of medical and surgical practitioners is always to impute the cure of every disease to whatever remedies happen to be employed ; and successes are too often boasted of, the merit of which belongs entirely to nature. It is, indeed, not very unfrequent to hear remedies panegyrically spoken of, which counteracts the salutary efforts of nature, who, in this case, is obliged to overcome both the disease and the irrational treatment which is applied to it. As Weidmann observes, this erroneous mode of considering things has happened particularly often among surgeons who have had cases of necrosis under their care, all of whom boast of the cures which they have accomplished, although some employed absorbent earths ; others, aromatics ; some, spirituous applications ; others, balsams ; some, acids ; others, caustics ; and some, armed with a winnle, made numerous perforations in the dead bone ; while many others rasped the part, or attacked it with the trepan, cutting forceps, the gouge and mallet, or even the actual cautery ; and a certain number did nothing more than apply dry lint. Nature, who was favourable to all, did her own work in silence, whatever were the remedies employed for her assistance : whether mild and inert, acrid and corrosive, or hurtful and improper.

The course that I pursue, after the fact has been fully established, that the bone is carious, or diseased, is, after having subdued excessive, or immoderate inflammation, to give a free exit to any collection of matter, and then, by the application of moderately stimulating agents, expose as much of the diseased bone as possible. If there be a number of sinuses communicating with it, from different points or parts, I make one common opening, either by mild escharotics, the ligature, or the bistoury, or the three combined.

I usually commence with the syringe, and inject in a solution of the *vegetable caustic*, or *weak ley*, the strength of which is to be gradually increased as the patient can bear it. This is very penetrating, stimulating and detergent, without exciting the least additional inflammation; but, on the contrary, it reduces it.

Having, in this way, expelled from the sinuses any collection of pus or matter, as well as excited a more healthy action in them, I next introduce as large tents as possible into every opening, applying a little of the vegetable and mineral caustic to them alternately. I have sometimes found it better to use one kind separately, for three or four days, and then the other. This will make the openings larger, and in every respect improve the condition of the ulcers, as well as the general health of the patient, which are very important circumstances in the treatment of the disease.

In the next place, where I wish to excite the least possible pain, or where the patient objects to any incision, I bend a common probe, in a suitable direction, and introduce it from one sinus to the other: then tie a piece of silk, or thread, to the other end of the probe, and draw it through, and tie it. After which, tie the silk in the centre or middle, and thus secure it. This should be daily turned a little, until it divides, or cuts the flesh; and, as fast as it is thus divided, lint must be forced into the incision, to prevent a reunion of the parts or wound.

All the sinuses are thus to be opened until they communicate with each other; and when this is the case, if the bone diseased is very large, and cannot be extracted without much force, I continue to apply the escharotics on each side of the wound, or bone, still further to expose it, and give it an opportunity for separation. Sometimes I have made small incisions instead of using the caustic by degrees, or as the strength of the patient could bear it. Very often, after this has been done, one or both ends of the bone will be brought to view, and then the practitioner will take hold of one end of the diseased bone with a pair of forceps, and gently elevate it. If it remains firm, when force is employed, let a twisting or rotatory motion be made. Should this be insufficient to extract it, or any portion of it, I still continue the dressings, which are the same as for any other ulcers, and with a strong blunt, but pointed and sharp instrument, something similar to the small blade of a pair of scissors, I make numerous perforations through the bone, and either divide it, or gradually remove it, by small pieces.

I have thought that it might be more expeditiously done by using a small drill, similar to some used by watch makers.

These means must be employed from time to time, as the state of the

disease and the patient's health will admit, taking care not to excite too much pain. After the bone, or bones, have been removed, as well as before, lint may be applied ; and the black salve, or plaster. If the sores do not readily heal after a piece of bone has been extracted, it may be taken for granted that there are other bones remaining. In this manner I have succeeded in successfully treating some of the most difficult cases of necrosis on record. I have removed the bones of the tibia and fibula, nearly from the knee to the ankle ; also the jaw-bone, and portions of bones from other parts.

By similar means, in one case, the whole tibia was removed in such a state that it was for some time hung up in the office as a curiosity. When it began to be separated, a piece of twine was tied around one end, and a gradual extension was made upon it daily, and as it separated, a *callus* was formed ; the patient recovered, and was enabled to walk as well as usual.

The restorative powers of nature are very strikingly exemplified in cases of this nature ; and it must be acknowledged that most of the process is accomplished by her powers instead of art.

In some cases, nothing but a small sinus extends to the bone, and so deep, that very little additional opening can be made. When this happens, we must rely upon stimulating injections, with the use of tents, to keep the orifice open, and occasionally passing in a probe, and pressing hard upon the bone, and turning it, in order to detach the *periosteum*, or covering of it, which is, in this case, usually the seat of the complaint.

I lately cured a very difficult case of this kind, of very long standing, with profuse discharge of matter, and the sinus, or opening, very deep : it was situated in the hip ; several small pieces of bone were removed, and the ulcer healed. I saw this patient the other day, and he still continues well. He called to express his gratitude, by making me a handsome present ; and at the same time stating, that the cure was worth a thousand dollars to him.

During the use of the local applications, medicine must be given internally : principally the *alterative syrup*. There are usually hectic symptoms with great debility, but they soon disappear after this treatment.

I lately dismissed a patient, cured of necrosis, who came about 200 miles to be attended, and who was extremely weak when he came ; but as soon as the ill-conditioned state of the ulcers was changed, and he had taken some internal remedies, (principally the alterative syrup,) he became strong and healthy as formerly.

The power which thus reproduces bones is only a modification of that which unites fractures. Indeed, what consolidates broken bones, and is known by the name of *callus*, presents all the characters of new bone, begins and grows in the same way, and may be impeded and retarded in its formation by the same causes. It is farther highly probable, as Weidmann remarks, that the power which effects the reproduction of bones, is the same as that which, in the sound state, nourishes and supports these parts.

It is a remarkable circumstance in the history of necrosis, that, in favourable instances of the disease, the inflexibility and firmness of

the limb are preserved, during the whole of the process by which the new bone is formed. Consequently, the new bone must have begun to grow and have acquired firmness before the old bone separated or was absorbed. Were this not the case, the limb must become flexible and useless the moment the dead bone is removed. Another consequence of the new bone being formed before the removal of the old one, is that the former must surround and include the latter. For, since the lifeless portion of bone completely occupies the space between the two living ends, these cannot be immediately connected by the new bony matter. The connexion can alone be completed by the new bone being deposited on the outside of the old one, from one end to the other, and attaching itself to the portions which still remain alive. The new bone must also be necessarily larger than the old one, because externally situated; and hence the affected limb, after the cure is complete, will always continue larger, clumsier and less shapely than the other. The length of it, however, remains unaltered, because the old bone retains its attachment, while the rudiments of the new bone are lying on its outside, and connect the living ends of the old one, by an inflexible mass, equal in length to the portion which is destroyed.

Thus we see, that in the process which nature follows in the formation of the new osseous shell, the old bone serves as a mould for the new one, and the first step of the process is to surround the old bone with an effusion of coagulating lymph.—(See *Russell on Necrosis*, p. 2-7.) How astonishing is this provision of nature to remove the disease! There is one almost infallible mark, or criterion, which will enable us to decide whether there is a disease of the bone, or bones, viz: after a sinus, or opening, has formed, the appearance of fungus, or proud flesh, rising high around the edges of it, and becoming everted or turning a little outwards.

I have found that this symptom invariably attends a *necrosis*, or a diseased bone.



## CHAPTER IX.

### CANCER AND SCIRRHUS—(*Carcinoma.*)

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A **HARD** tumor, or scirrhus, is considered as the occult or primary stage of cancer, and is not an unfrequent consequence of inflammation, when it has attacked or occupied glands. The part becomes of increased size, is knotty, hard and irregular to the touch—being, however, unattended with any discolouration of the skin—and acute, lancinating pains are every now and then felt darting through the tumour. At length, a tendency to cancerous ulceration becomes obvious.

A cancer is an ulcer of the very worst kind, with an uneven surface, and ragged and painful edges, which spreads in a very rapid manner, discharges a thin, acrimonious matter, that excoriates the neighbouring integuments, and usually has a very fetid smell, and which is generally preceded by a hard, or scirrhus swelling of the part, if glandular.

The disease is most commonly confined to glands, and particularly the breasts, but is, nevertheless, now and then to be met with in the uterus, as likewise in the face and other parts that are thinly covered with flesh, and which are at the same time much exposed to external irritation; such as the lower lip, the angles of the eyes, the organs of vision, the tongue, &c. From a lodgment of soot in the rugæ of the scrotum, chimney-sweepers, who have arrived at the age of puberty, are very subject to a peculiar cancerous affection in this part, and first noticed by Pott.

Cancer, says Dr. Thomas, is most generally met with in persons advanced in life, and particularly in women, about the period when the menses cease. The disease being often met with in unmarried females about this time of life; it has been thought by some that celibacy predisposes to the complaint. Women who have had no children, as likewise those who have had them, but not suckled them, are frequently affected with cancer. From several persons of one family having been afflicted with cancer, it seems as if there had been a hereditary predisposition, from some peculiarity or structure, in these instances, to the disease. Climate appears to have some degree of influence in predisposing to cancer: in cold, northerly regions, the disease is not only more frequent than in the southern parts of Europe, but seems likewise to be more intractable in its nature.

It has been observed, that cancerous affections are more prevalent in persons of a scrofulous constitution.

The experiments of Mr. North and others prove the non-existence of specific cancerous matter. Mons. Alibert inoculated himself and some of his pupils with cancerous matter; and although, in some

instances, inflammation of the part, and of the lymphatics proceeding from it, occurred, yet nothing like scirrhus or cancer succeeded.

A cancer arises most frequently from some external injury, such as a blow, but is now and then to be met with as the consequence of previous inflammation excited by other causes.

Irritation during the scirrhus state of a gland, without any wound or breach of the skin, may be propagated to other glands, and these may take on a similar action with the gland first diseased; but absorption does not take place until the gland becomes ulcerated. When this is the case, the irritation from one gland to another goes on not only more rapidly, but absorption takes place from every part of the diseased surface.

A late writer has offered it as his opinion, that cancer is produced by hydatids. That these may be formed on a cancerous gland, cannot be disputed; but that they are generally to be met with, or are essential to the disease, cannot be admitted.

### *Symptoms.*

Cancer usually begins with a small swelling in the gland, unaccompanied by pain, or any discolouration. It gradually increases, both in size and hardness—in process of time, is attended with lancinating pains, as if a sharp-pointed instrument was entering the tumour, and with varicose swellings of the subcutaneous veins, together with an uneasy and painful sensation in the neighbouring parts. Sometimes, it remains in this indolent and occult, or scirrhus state, for a length of time; but in other instances it proceeds on to suppuration with great rapidity, and forms an ulcer. Its progress will, however, depend much on the state of the person's constitution, and other like causes. It has been supposed, that in proportion to the rapidity of the progress of any individual case, so is its degree of malignancy.

During the occult state of cancer, the pains recur at very irregular intervals, and are dependent upon causes, concerning which, nothing satisfactory is known. If the disease is seated in the breast, and the female of such an age, that the catamenia have not altogether disappeared, she will usually suffer a considerable more pain in the part about the times of their recurrence. The tumour will likewise undergo, most likely, a proportionally greater augmentation of bulk, than during the same space of time at any other period.

When the tumour begins to form adhesions to the surrounding parts, and the disease is in the breast, it is not uncommon to find one or more of the axillary glands on the same side of the body somewhat enlarged.

As the disease approaches near the surface, the integuments, which had hitherto retained their natural appearance, begin to look puckered, or as if they were drawn together in folds. From this cause, the nipple will be sometimes so retracted, and sunk, as it were, in the surrounding parts, that its existence might be overlooked by a superficial observer.

When the disease has advanced further, the skin becomes inseparably united to the tumour beneath it, and in a little time more it may

be observed to have acquired a slight tinge of redness. The other characters of inflammation are also present, though some of them may be in an inconsiderable degree. After a time, the whole surface of the swelling puts on a purple, shining appearance, and in this state it continues, with but little change, till ulceration is about to take place. From the great increase of pain which usually happens at this period, a degree of febrile irritation will often be excited in the system at large.

The superincumbent parts at length give way to ulceration, and the patient probably experiences a temporary relief, from the discharge of a small quantity of sanious or ichorous matter. In general, it is not until after some time, that the ulceration becomes deep and excavated; for, under mild treatment, it has been known to continue superficial for some months. Sooner or later, however, the ulcer assumes the true carcinomatous or cancerous character. It penetrates deep towards the more central parts, while at its circumference the edges appear hard and elevated. The surrounding skin puts on a livid aspect, and from the surface of the sore there is a considerable discharge of an irritating, corrosive quality. Matter of a true purulent appearance is hardly ever furnished by these ulcers. The odour of the discharge impresses the organ of smell with a peculiar, but indescribable sensation.

If the ulceration be extensive, it will be observed, that, while one part of the sore is undergoing a sloughing process, another will be active in throwing forth luxuriant granulations, of a loose and spongy texture. These changes appear sometimes to alternate with each other upon the ulcerated surface, and, in their further progression, give rise to considerable hæmorrhages from the erosion of the vessels.

From the derangement which is occasioned in the functions of the lungs, by the morbid condition of the parts, there gradually comes on difficulty of breathing, attended by cough and some degree of emaciation, which symptoms are usually followed, at no great distance, by a fatal termination, and this frequently without any remarkable alteration in the external appearance of the diseased part.

Cancer of the breast is chiefly a disease of middle and advanced life; from forty to fifty years is perhaps the most frequent period at which it makes its appearance.

The female organ which is most likely to suffer from cancer, next to that of the breast, is the uterus; and, like the former, it is a disease of comparatively rare occurrence before the period of life at which the catamenia, or menses, usually disappear. The early symptoms of this complaint somewhat resemble those of polypus, and prolapsus uteri, or falling of the womb: among them may be enumerated, a sense of weakness, with pain or uneasiness in the loins, leucorrhœal discharge, and a sense of bearing down. To these may be added, weight and fulness in the region of the pelvis, with acute, shooting pains across the cavity, and more or less of derangement in the functions of the liver. There is also a pain in coitu, and, on an examination with the finger, the os uteri is discovered to be partially thickened and indurated, with an increase of size in its aperture. It sometimes happens, however, that the enlargement begins higher up

in the neck of the womb, the os uteri remaining closed. In both cases, the uterus appears to be situated lower in the vagina than is usual in the healthy, unimpregnated state, and, when supported upon the finger, a sensible addition to its weight is to be perceived.

After ulceration has taken place, there will be a constant discharge of an offensive sanious matter from the vagina. If an examination be again instituted, the os uteri will be found more open, and with ragged, irregular edges. Pressure upon these parts will now occasion some degree of pain, and a little blood will commonly be observed to come away upon the finger. About this time, the vagina undergoes a considerable deviation from its natural structure; it becomes somewhat hard to the feel, and its rugæ cease to be distinguishable. At the superior part, it will frequently be affected with ulceration, communicated from the mouth of the womb, by the continuity of surface.

As the different functions of the body become more and more disordered, emaciation increases with rapidity. Frequent retching and vomiting, with torpidity or irregularity of the bowels, arise, mental dejection and despondency ensue, and a sort of hectic fever is constantly present. Towards the latter period of the disease, if the ulceration of the vagina becomes extensive, there will frequently be an enlargement of the absorbent glands in the groin; and this sometimes arrives to such a degree, as to occasion œdema, or swelling, of the whole lower extremity. It seldom happens that the hæmorrhage from the ulcerated parts is in so violent a degree as to prove fatal of itself.

The progress of scirrhus of the testicle is usually slower than where the disease occurs in other glandular parts; yet it is capable of being more or less accelerated according to the degree in which the different causes of irritation, whether local or constitutional, are permitted to have influence. The tumour goes on gradually to increase in size, and is attended with nearly the same symptoms and appearances that have been described as appertaining to the cancerous breast. The acute darting pain is at first confined to the precise site of the swelling, but afterwards extends in the direction of the spermatic chord to the abdomen, and even up the spine and in the loins.

In process of time, the shape of the gland becomes totally obscured, and nothing remains to be distinguished but the enlargement, which is remarkable on account of its weight, excessive degree of hardness, and its surface being studded more or less with protuberant inequalities.

When the disease begins to extend, it proceeds from the testicle to the epididymis, and thence by the lymphatic vessels of the chord, till it arrives at the lumbar glands. In this course there is produced great thickening and induration of the different parts through which it passes. An irregular or knotted feeling of the spermatic chord is another and very striking effect of the extension of the disease. Some time after the lumbar glands have been contaminated, derangement in the functions of the various neighbouring viscera is perceptible, and at this time a prominent tumour may be distinguished through the parietes of the abdomen, consisting of a cluster of these enlarged



lymphatic glands. In process of time, cancerous ulceration of the testicle ensues, and in some instances is extended to the scrotum.

Scirrhus of the prostate gland is a disease with which men far advanced in life are very apt to be afflicted, but particularly those who imprudently produce an excitement of the seminal vessels by long toying with women, or by unnatural means, or onanism. The frequency of the disease may be attributed to the unusual degree of irritation which, in the present licentious state of society, is kept up in the organs of generation by Cytherean excesses, and their attendants, strictures and the use of bougies. After a time, sharp, lancinating pains are felt darting through the gland now and then, the flow of urine becomes considerably obstructed, and dysuria, and occasionally tenesmus, with ischuria, and other distressing symptoms, arise.

At length ulceration ensues, and the patient sinks gradually under a state of misery and pain, or he is cut off by a total suppression of urine.

The cancer with which chimney-sweepers are sometimes attacked, generally begins in the rugæ of the scrotum, in the form of a wart. This, from the itching and uneasiness it at first occasions, and from the part being frequently rubbed in the act of climbing and descending the chimneys, is often scratched and otherwise irritated; thus, a constant stimulus is applied in addition to the action of the soot on the part. If the head of the wart is picked or rubbed off, another is soon formed; and at length there is not only a horny crust, but a thickened base beneath, proceeding inwards, until a large fungus or a spreading ulceration is produced, which at length occasions the testicle also to become affected.

Cutaneous cancer is most frequently observed to occupy the lower lip, the angles of the eyes, the nose, and penis. At its commencement it usually appears under the form of a small preternatural enlargement or elevation of the skin. Sometimes it is so hard to the touch and in consistence as nearly to approach to the nature of horn, while on other occasions it will bear a much nearer resemblance to a common wart. In a few instances it will put on the appearance of a small discoloured pimple.

Under whatever form the disease may first appear, a degree of surrounding hardness will invariably be found to take place. Some degree of shooting pain from time to time is likewise experienced in the part. In many cases ulceration seems to be materially accelerated by the accidental irritation of the patient's fingers, which are often, although unconsciously, applied in the vicinity of the disease. Sometimes, however, a sort of scale is generated, so as to form a covering to the little tumour, and this will be removed and again be renewed several times in succession, before ulceration is perfectly established.

When the part has once arrived to a state of ulceration, it quickly puts on those characters of malignity which have occasioned it to be classed as a species of cancer. The surface of the sore possesses, indeed, the common appearance of cancerous ulceration, and there is a discharge from it of sanious or other ulcerated matter. In cutaneous ulcer it seldom happens that the lymphatic glands begin to en-

large or grow painful till after the diseased part has been in a state of ulceration for a considerable time, which forms a striking point of difference between this disease and that which has its seat in glandular structures.

In a very great number of cases of cancer of the penis, it has been remarked, that phymosis had naturally existed; hence it has been inferred by some, that phymosis may generate a predisposition to this affection. A review of the cases published by the authors referred to,\* and in which amputation of the penis was performed, seems to countenance the opinion that cancer of the penis is an affection purely local, and hence less frequently produced than cancer of other parts.

Cancer of the tongue, like cutaneous cancer, seems to admit of a certain degree of variability in its appearance, which is, however, most commonly that of a small hard tumour, situated on the upper surface of the tongue, and at no great distance from its anterior extremity. The tumour usually possesses a firm connexion with the subjacent parts, and, before arriving at a state of ulceration, it is not unusual to see it attain a size equal at least to that of a common hazel nut.

Another form under which this disease sometimes shows itself at an early period, is that of a little discoloured pimple, having a disposition to bleed very freely from the slightest cause; but there is likewise a third case, where carcinomatous ulceration suddenly breaks out upon the tongue without the part having previously suffered any morbid change of structure, or presented any unnatural appearance sufficient to attract notice.

The pain attendant on the disease in its different stages, though varying in degree, is yet always of that peculiar darting kind which belongs to cancer. When first complained of, it is only slight and partial; but, gradually increasing in severity as the disorder advances, it will in time extend so as to be felt both about the fauces and base of the skull. The disease may continue a long time even in an ulcerated state without the health appearing to suffer very materially from it. The entire destruction of a great portion of the tongue will sometimes be produced by cancerous ulceration before death takes place in consequence of the disease.

Cancer of the tongue is more frequently met with in those who are pretty far advanced in years, than in subjects under the age of puberty.

Tumours of the breast are often removed with perfect safety, and thereby prevented from degenerating into true cancers, when it is not delayed too long; but after a tumour of this description has ulcerated, thereby assuming the carcinomatous character, and has afforded an opportunity for an absorption of the matter into the system, there is every reason to suppose that a complete cure can seldom be effected; for although we remove the diseased part, still the virus will be likely, sooner or later, to show itself in some other glandular place.

Sir Everard Home has observed, that with respect to the internal

\* See Practical Observations in Surgery, by Mr. Hey.—Parallel of French and English Surgery, by Mons. Roux.

structure and appearance of the breast affected with a scirrhus, if a section is made of such a tumour in an early stage, where the structure is seen to advantage, it puts on the following appearances:—The centre is the most compact, harder to the feel, has a more uniform texture than the rest of the tumour, and is usually of the consistence of cartilage. This middle part does not exceed the size of a silver penny, and from this in every direction, like rays, are seen ligamentous bands of a white colour, and very narrow, looking in the section like so many irregular lines passing to the circumference of the tumour, which is blended with the surrounding gland. In the interstices between these bands the substance is different, and becomes less compact towards the outer edge. On a more minute examination, transverse ligamentous bands of a fainter appearance form a kind of net-work, in the masses of which the new-formed substance is enclosed.

In a further advanced stage of the tumour, the whole of the diseased parts have a more uniform structure: no central point can be distinguished, the external edge is more defined and distinct from the surrounding gland, and the ligamentous bands in different directions are very apparent, but do not follow any course that can be traced.

No regular distinction of structure can be made in parts affected with carcinomatous ulceration. In the centre, however, is a small irregular cavity filled with a bloody fluid, the edges of which are ulcerated, jagged, and spongy.—(*Thomas.*)

#### *Causes.*

With respect to the causes of cancer, the disease is very frequently imputed to blows, pressure, and other accidental injuries; but there are almost always other circumstances concerned, which have more influence than the accidental violence. “Although (as Sir Astley Cooper remarks) the disease operates on some particular part of the body, it is always preceded by a state of constitution which has excited it. He who looks at this disease in the light merely of a local affection, takes but a narrow view of it. A blow or a bruise, inflicted on a healthy person, would be followed by common inflammation only, which would lead to the removal of the matter effused. But if a blow were received on the breast, when the constitution was disposed to the formation of scirrhus tubercle, it would be the cause of a particular action being excited in the part injured, and might lay the foundation of this complaint. Yet the formation of scirrhus tubercle does not entirely depend on constitutional derangement; there must be also a peculiar action excited in the part.” In order to prove that the disease must depend on constitutional derangement, and an altered action in the part unitedly, Sir Astley Cooper observes, that if a scirrhus be cut into, all the horrors of cancer will be the result of the injury; but if the cut be made in the healthy parts around the disease, no cancerous ulceration follows, and the wound heals. In short, he argues that the disease is the effect of a specific action in the part, preceded by a disposition in the constitution to its production.—(*See Lancet*, vol. ii. p. 378.)

In the breast cancer frequently commences without any previous accidental injury of the part; a fact tending to establish the correctness of such writers as represent the disease to be of a constitutional nature. In these cases there is always an irregularity or disappearance of the menses; and the affection of the breast may be supposed to depend on sympathy between it and the uterus. Certain it is, that cancer is very frequent about the time of life when the menstrual discharge ceases.

It is a commonly received opinion, that cancer is an hereditary disease, or observed to prevail a good deal in particular families. Sir Astley Cooper has known it occur in three sisters.—(*Lectures, &c.* vol. ii. p. 186.) Sir Everard Home has endeavoured to reconcile this to the doctrine of the disease being at first entirely of a local nature; circumstances which seem incompatible: "It is now universally admitted (says he) that children take after their parents in the general structure of their bodies, and therefore will be more or less liable to have the different solids of which they are composed disturbed by the same causes; and when a violence of any kind is committed upon them, it may be productive of the same diseases. In some families, the venereal disease shall always appear in the form of gonorrhœa [?]; in others again, rarely or never in that form, but in that of chancre [?]. Strictures in the urethra are common in some families: they have taken place in a father and all his sons, from very slight causes; such, indeed, as would not have produced the disease in others. Yet stricture cannot be called hereditary, because it is a local complaint, arising from a local inflammation, differing in different people, according to the natural irritability of the parts which are affected. In this way, and this only, can cancer run in families, and be an hereditary disease," &c.—(*Obs. on Cancer*, p. 150.)

### *Common Treatment.*

#### *Extirpation by the Knife.*

Various applications are recommended and used for cancer, but the knife is employed as the only remedy; yet I have never seen a solitary instance cured by it; the very nature of the disease, its extensive ramifications, the structure of the parts diseased, show conclusively that the act of cutting out a portion of the diseased mass is of no service, but, on the contrary, in almost every case exasperates it. I have seen a cancer grow more in a month after an operation, than it did in three previously; and it appears to rise partly from the nature of an incised wound, that soon heals and retains the cancerous matter, which proves an additional source of irritation, and partly from irritation, inflammation, or other causes.

I have had a great share of practice in this disease, both before and after an operation has been performed, and, therefore, have had an opportunity of knowing the effects of the common practice, particularly of the knife; and I must give my testimony against the use of it in any case whatever; for I am satisfied, that it only aggravates the disease.



I am astonished that surgeons will continue to operate for cancers ; when they *must positively know, by their own experience, that instead of removing, it exasperates the disease, and accelerates its growth.*

I have been called, in every direction, to see persons labouring under cancer, for which excision has been made, and I have invariably found that every one of the patients has deprecated and given their testimony against it.

Could the knife penetrate as far as the cancerous poison extends into the glandular system, and could the subject of it bear the operation of having the whole extirpated, there might be some probability of effecting a cure. But how can this be ? Is not the blood, or the mass of fluids, in a greater, or less degree, contaminated ; and if so, does it not betray *consummate ignorance*, to say the best of it, to use the knife with a view to remove the disease ? We have evidence that the constitution is, more or less, affected ; and if so, with what propriety or prospect of success can such cruel and unnatural means be relied upon or resorted to ?

Sir Astley Cooper, and many other experienced men, both of the past and present time, consider cancer as decidedly a complaint connected with a peculiar state of the constitution. When an operation is performed, little cancerous bands, resembling ligaments, shoot into the surrounding adipose substance, and even the fibres of the muscles beneath the cancerous disease are frequently affected.

I know that many tumours have been extirpated, which have borne the name of cancer, but I am well satisfied, that they were fleshy or sarcomatous.

“Until late years,” says Cooper, “the accounts given of the results of operations for cancers were so unpromising, that they deterred many patients from undergoing a timely operation ; which, for cancerous complaints, is the only remedy with which we are as yet acquainted entitled to much confidence. As Mr. B. Bell remarks, the great authority of Dr. Alexander Monro must have had no inconsiderable influence even with practitioners, in making them much more backward in undertaking the extirpation of cancers than they otherwise would have been. ‘Of near sixty cancers,’ says he, ‘which I have been present at the extirpation of, only four patients remained free of the disease at the end of two years : three of these lucky people had occult cancers in the breast, and the fourth had an ulcerated cancer on the lip.’—(*Edin. Med. Essays*, vol. v.) Dr. Monro also observes, that in those in whom he saw the disease relapse, it was always more violent, and made a quicker progress than it commonly did in others on whom no operation had been performed. Hence, he questions, ‘whether ought cancerous tumours to be extirpated, or ought the palliative method only to be followed ?’ and, upon the whole, he concludes against their extirpation, except in such as are of the occult kind, in young healthy people, and have been occasioned by bruises, or other external causes.”

*Reformed Practice.*

1st. *Treatment of Cancer in a state of Schirrus, or before it ulcerates.*—It is a contested point, whether a truly cancerous disease is susceptible of any process, by which a spontaneous cure can be effected. It appears certain, however, that a violent inflammation, ending in sloughing, may sometimes accomplish an entire separation of a cancerous affection, and that the sore left behind may then heal. Facts, confirming this observation, are occasionally exemplified in cases where caustic is used, and accidental inflammations have led to the same fortunate result, as we may be convinced of by examples recorded by Sir Everard Home, Richerand, &c. The latter writer, advertg to the effort which nature sometimes makes to rid herself of the disease by the inflammation and bursting of the tumour, takes the opportunity to relate the following case. A woman, aged forty-eight, of a strong constitution, was admitted into the hospital at St. Louis, with a cancerous tumour of the right breast. The swelling, after becoming softer, and affected with lancinating pains, was attacked with an inflammation, which extended to the skin of the part, and all the adjacent cellular membrane. The whole of the swelling mortified, and was detached. A large sore, of healthy appearance, remained after this loss of substance, and healed in two months.—(*Nosographie Chir.* t. i. p. 381. 2d edit.)

When any gland has become enlarged, indurated, and shows a tendency to be scirrhus, we should, from the earliest period, use our utmost exertions to discuss, or at least to prevent its further increase. Applications of a *discutient* and sedative nature should be had recourse to without delay; pressure of any kind should be guarded against, particularly from lacing, if the breast is the part affected; the bowels must be kept free and open by purgatives administered from time to time, and a cooling regimen be enjoined, cautioning the patient to abstain from all spiritous liquors, and from other stimuli of every kind.

When the disease is in a state of tumour or scirrhus, let the following discutient ointment be applied:

Take of bark of the root of *bitter-sweet*, (*solanum dulcamara*,) 2 oz.

*Stramonium leaves*, (*datura stramonium*,) 2 oz.

*Cicuta leaves*, (*conium maculatum*,) 2 oz.

*Deadly night-shade*, (*atropa belladonna*,) 2 oz.

*Yellow dock-root*, (*rumex crispus*,) 2 oz.

Bruise the articles, and cover with *spirits*; simmer a few hours; then add *fresh butter*, sufficient, when melted, to cover the whole; simmer moderately over embers, until the strength is extracted; then strain, and cover in an earthen jar. Let the tumour be well bathed with this ointment three or four times a day before the fire, or any heated substance may be held a little distance from the part during the act of bathing. After the tumour has been anointed, let a plaster be applied, made as follows:

Take one bushel of the roots of *poke* or *coakum*, (*phytolacca decandra*;) bruise, and add a sufficient quantity of soft water; boil a few hours, and pour off the liquid; then add more water, and boil again,

and thus continue until all the strength is extracted, after which, remove the roots, strain the decoction, and again boil, until most of the watery portion of the liquid has evaporated; after which, add ten pounds of *fresh butter*, three pounds of *beeswax*, one pound and a half of *mutton tallow*; simmer again until the water is extracted. Let this *plaster* be spread upon linen, applied to the tumour, and renewed once a day.

Every other night on going to bed, if there is any pain in the tumour, steam with the following decoction :

Take *Boneset*,  
*Wormwood*,  
*Horehound*,  
*Hops*;

Boil two or three hours in equal parts of *vinegar* and *water*; throw the decoction and the herbs into a suitable vessel, to which add a small quantity of *soft soap*; place the vessel underneath the tumour or parts affected, and let the steam be confined by a blanket. Continue the application of it fifteen or twenty minutes each time, and if it produces no perspiration, throw in a heated iron or brick. If the tumour be in the breast, the articles may be put into a large bowl, and placed directly underneath it. When the axilla and arm are swelled, let the steam be also extended to these parts.

When the patient is in the most excruciating pain, this treatment will mitigate it by eliminating the cancerous humours, removing the tension, swelling and inflammation connected with it, and rendering the parts more soft and natural.

During the use of these medicines, the patient may take the following syrup :

Take *yellow dock-root*, (*rumex crispus*,) two pounds;  
*Bark of bitter-sweet root*, (*solanum dulcamara*,) two pounds;

Bruise, and boil till the strength is obtained; strain and boil till there is twelve porter bottles; add sufficient loaf sugar to prevent fermentation. A wine glassful may be taken three or four times a day.

I have also given, in connexion with this syrup, a pill, made of the extract of *cicuta*, containing a grain or two; and, if no nausea follows its use, to be gradually increased. I think it is an auxiliary, but I do not entertain the highest opinion of its efficacy.

A purgative should be given about twice a week, and the powdered root of *mandrake* is preferable.

I have thus given the treatment for cancer in its scirrhus state, and it has removed some very obstinate cases; but it will sometimes, in spite of the best known treatment, put on a very malignant character, and inflammation will take place. When this occurs, the same remedies may be applied, except the plaster; and for this, the following poultice must be substituted, with a view to moderate inflammation, and favour suppuration.

Take *cicuta leaves*, and simmer them in rain-water until they are soft; then stir in *slippery-elm bark* to form a poultice; and let it be applied tepid, morning and night, as long as there is inflammation, or ulceration. And even after an abscess is formed, or the tumour discharges, the poultice may be continued, at least a part of the time, in order to reduce the swelling and promote a discharge.

When this has taken place, when the inflammatory symptoms have been measurably subdued, and the disease assumes a chronic character, a course somewhat different must be pursued. It will be necessary to use the poultice occasionally to lessen heat and irritation, as in almost all cases of cancer there are more or less of these symptoms present. But, in general, we must rely more upon stimulating applications, with a view to aid the powers of nature to throw off the disease. To effect this, she establishes a discharge, and it is our business to promote it, if the strength of the system will admit. To accomplish which, many are in the habit of applying various kinds of *cancer plasters*, such as *arsenic*, &c.; and almost always under pretence that they are *vegetable*. There is an agent, in this city, of Dr. Davidson, who has become considerably popular for the cure of cancers, and, as he says, by simple and vegetable means; but it is, I believe, a well established fact, that the basis of his plaster is *arsenic*; and if it has cured some, it has killed others. I, however, have more confidence in almost any of the preparations used for extracting cancers, than I have in an operation by the knife. The latter is exceedingly painful, uncertain and dangerous, while the former, even though it be very severe, will sometimes, by its corrosive, or escharotic effects, cure the disease. But much depends upon the nature of the application or plaster made use of, as there is a very great difference in the effect of different agents employed. I have tried and seen tried almost every thing that has been highly extolled, or that has gained much celebrity for the cure of cancer, and I feel therefore prepared to make such a discrimination, and to give such directions as may be relied on, and entitled to confidence.

Any preparation of arsenic, blue vitriol, or lunar caustic, I consider to be injurious.

The attention of practitioners has long been directed to the vegetable kingdom for an antidote to this formidable disease; but unhappily none has, as yet, been discovered, the properties of which are sufficiently active, invariably, or even generally, to cure it; especially when it has become confirmed, or in the latter stages; nor have our researches into the mineral kingdom been successful. It is true, cancers may be cured in their incipient or forming stages, and oftentimes when they are considerably advanced or progressed. I have successfully eradicated them, in numerous cases, where the disease had not proceeded too far.

I shall now state what dependence may be placed upon both *vegetable* and *mineral* preparations, and show how far they may be beneficially employed.

Of the different vegetable productions, I have found the following the most active and salutary, where cancer is in a state of ulceration.

Take any quantity of hickory *ashes*, and leach them; boil the *ley* until it is of the consistence of molasses or honey; spread a small quantity upon a piece of leather, and apply to the part affected. Let it remain until the pain produced by it subsides; after which apply the poultice mentioned above. It may be applied daily, or as often as the strength of the patient will admit. The plaster, or *extract*, must be kept from the air, or its virtues, or active properties, will be de-



stroyed. The effect of this preparation, is to excite a preternatural discharge, or cause a sloughing of the ulcer, and thus remove or diminish it. It has a peculiar operation, different from any known substance; that while it proves very active, and somewhat corrosive, instead of creating inflammation, like other kinds of caustic, it absolutely diminishes it. Hence it becomes a valuable agent in this, as well as many other complaints. In general, a *poultice* may be applied at night, and our *black salve* or *plaster* during the day, using, after every dressing, lint, on which is spread a little emollient ointment, such as the marsh mallow or diseutient. This treatment has removed many cancerous ulcers which were supposed to be incurable.

Should the disease, however, resist the applications, and remain stationary, or continue to progress, let a plaster be applied, made as follows:

Take *white-oak bark*, clear of ross or the exterior portion, and bruise, half a bushel; cover the same with soft water, or, what is better, chamber ley, or urine; let it stand in a warm place two or three days properly to digest; then boil, pour off the liquid, add more of the urine, and boil again, and thus repeat till all the strength is extracted; slowly simmer down till it becomes of the consistence of molasses; then take *white turpentine*, the gum, half a pound, melt and strain it, and add to the extract, and also half a pound of strained *honey*; boil a few minutes to incorporate, and remove it from the fire. To every ounce of this extract, add from half a drachm to a drachm of pulverized *white vitriol*; let it be spread on a soft piece of leather, and applied to the cancer. It may be renewed every day or two, according to circumstances.

This forms about the best cancer plaster, taking all circumstances into consideration, of any article with which I am acquainted. The tumour almost invariably becomes diminished, and soot under it: the indurated, or hardened edges, gradually diminish, the size of the sore lessens, and in very many instances, used with the other means recommended, will effect a radical cure; and, even where it does not, it never fails to arrest the progress of the disease, to lessen the pain, swelling and inflammation, and in every respect to improve the condition of the patient. It changes both the quality and quantity of the discharge, and renders the patient comfortable.

In the last place, I shall mention the most *corrosive* and active preparation that I have ever used, or that there probably is, either in the *mineral*, *animal* or *vegetable* kingdom, and should never be employed with a view to effect a cure, except as the last alternative, when every other means fail. I allude to the *mineral caustic*, the only active ingredient of which is the *corrosive sublimate*. It is *exceedingly* active, the most so of any caustic; yet, when mixed with other ingredients, it may be used without exciting very great pain. It certainly has the power, when a proper opportunity offers, of destroying the cancerous virus or poison; but it must be applied, if applied at all, in the early stages of the disease, before it has progressed too far. When all other means prove abortive, and it is deemed expedient to make use of it, let it be applied in the form of powder to the parts, and kept on for twelve or twenty-four hours, when a poultice must be applied.

It may be added to the preceding extract, and in the same proportion, a drachm of the powder pulverized to an ounce of the extract, spread upon linen or leather very thin, and applied about twice a week, or as the patient can bear it, for about six or twelve hours. It creates considerable pain, and, when applied weak, causes a free discharge; but when applied very strong, produces an eschar, or destroys the flesh, which usually sloughs off in a few days.

Although I have spoken of this article, often employed it, and with it cured many cancerous cases, yet I should much prefer a milder and more effectual remedy.

In relation to this remedy, however, I have to observe, that it is not so violent in its operation as arsenic, nor is it so dangerous; nor is there any danger, as far as my experience goes, from absorption into the system. If the patient complains of great pain, under the influence of this or any other application, an *opiate* may be administered. I have used a plaster, made of the *cicuta leaves*, with advantage; and it may be tried when other means fail. Various other articles have been highly extolled, and some of them as specifics; such as the *pippsiseua*, or *pyrola umbellata*; but I am well persuaded, by experience and observation, that they cannot be depended upon.

Cornelius C. Cuyler, pastor of the reformed Dutch church in Poughkeepsie, has communicated the following preparation for the cure of cancer. He details several cases which have been removed by it.

Take the narrow leaved dock-root, boil it in soft water, wash the ulcer with the strong decoction, warm as it can be borne; fill the cavity with the liquor for two minutes; then scrape the hulk of the root, bruise it fine, put it on gauze, and lay it over every part of the ulcer; dip a linen cloth in the decoction, and put that over the gauze; repeat this three times in twenty-four hours, and at each time let the patient take a wine glassful of the tea made of the root, with one third of a glass of port wine, sweetened with honey.

## CHAPTER X.

### SOFT CANCER—BLEEDING FUNGUS—(*Fungus Hæmatodes*—*Medullary Sarcoma*.)

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THIS is one of the most obstinate and terrible diseases which afflicts the human system, and is very apt to prove fatal under the best treatment. A tumour first appears, which easily yields to pressure, but soon returns to its original size, as the pressure is removed. It soon puts on a red appearance, ulcerates, bleeds, and becomes very painful. The disease most frequently attacks the eyeball, the upper and lower extremities, testicle and breast, and it sometimes attacks the uterus, ovaria, liver, spleen, brain, lungs, hip and shoulder-joint.

#### *Fungus Hæmatodes of the Limbs.*

In the extremities, the disease begins with a small colourless tumour, which is soft and elastic, if there be no thick covering over it, such as a fascia; but otherwise it is tense. At first, it is free from uneasiness; but by degrees a severe acute pain darts occasionally through it more and more frequently, and at length becomes incessant. For a considerable time the tumour is smooth and even; but afterward it projects irregularly at one or more points; and the skin, at these places, becomes of a livid red colour, and feels thinner. In this situation it easily yields to pressure, but instantly bounds up again. Small openings now form in these projections, through which is discharged a thin bloody matter. Almost immediately after these tumours burst, a small fungus protrudes like a papilla, and this rapidly increases both in breadth and height, and has exactly the appearance of a carcinomatous fungus, and frequently bleeds profusely. The matter is thin, and exceedingly fetid, and the pain becomes of the smarting kind. The integuments, for a little way round these ulcers, are red and tender. After ulceration takes place, the neighbouring glands swell, and assume exactly the spongy qualities of the primary tumour. If the patient still survive the disease in its present advanced progress, similar tumours form in other parts of the body, and the patient dies hectic.

After death or amputation the tumour is found to consist of a soft substance, somewhat like the brain, of a grayish colour, and greasy appearance, with thin membrane-like divisions running through it, and cells or abscesses in different places, containing a thin bloody matter, occasionally in very considerable quantity. There does not seem uniformly to be any entire cyst surrounding the tumour; for it very frequently dives down between the muscles, or down to the bone, to which it often appears to adhere. The neighbouring muscles are of a pale colour, and lose their fibrous appearance, becoming more

like liver than muscle. The bones are always carious in the vicinity of the disease.

The distemper is sometimes caused by external violence, though in general there is no evident cause whatever.—(*Dissertations on Inflammations*, by J. Burns, vol. ii.)

### *Fungus Hæmatodes of the Eye.*

This malignant fungus is a disease (says Cooper) which soon proves fatal, unless an operation be early performed: even the chance of success is extremely doubtful. No age appears exempt from it; but it more frequently attacks the young, and a large portion of the cases occur before twelve years of age.

On looking into the eye at the commencement of this complaint, you see opposite to the pupil, and deeply seated, an appearance like a mirror, resembling an opacity of the lens, from which it is difficult to distinguish it. If you watch the progress of the disease, you will see that this appearance enlarges into a prominence, proceeding from the bottom of the eye towards the cornea, and as it reaches the lens, you must be the more on your guard, that you do not mistake it for cataract. There is one appearance, however, at this stage, by which you may distinguish the one from the other, upon the opaque substance, or the retina, of which its covering consists. The other symptoms are loss of vision, and the iris remaining immovable. As the prominence enlarges, the iris becomes protruded, and the cornea distended. The conjunctiva becomes inflamed, the eyelids vascular, and in a diseased state; and, in progress of time, the cornea sloughs, an opening is formed, and a discharge of a ropy mucus first takes place.

The fungus does not always protrude through the cornea, but sometimes through the sclerotic, and then it has a purple livid hue, and is covered by the conjunctiva. As it increases in size, it assumes a dark red colour, its surface is unequal and irregular, it bleeds at the slightest touch, the parts slough, and then there is a fetid sanious discharge.

During the progress of fungus hæmatodes of the eye, the health becomes affected, the countenance puts on a sallow hue, and the patient wastes in flesh.

The disease is accompanied, and generally preceded, by disorder of the digestive organs; the appetite is impaired, and there are present all the other marks of derangement of the general health. When the strength and health are broken up, the disease very soon comes to a termination. The close of the disease is preceded by hectic fever, as is that of most complaints from which the general health has suffered much during their progress. In fungus of the eye, the rest is completely destroyed, there is an affection of the nervous system, and, in children, convulsions come on, which terminate their existence.—(Cooper.)

### *Fungus Hæmatodes of the Testicle.*

Fungus hæmatodes of the testicle sometimes begins in its glan-



dular part, sometimes in the epididymis. Its progress is slow, and the pain generally not severe; nor is there at first any inequality or hardness of the diseased part, nor change in the scrotum. When the testicle has become exceedingly large, it feels remarkably soft and elastic, as if it contained a fluid. Hence the case has often been mistaken for a hydrocele, and punctured with a trocar.—(*Wardrop, Earle, in Med. Chir. Trans.*, vol. iii. p. 60.) Occasionally, when the tumour is large, it is in some places hard, in others soft. The hydrocele may be known by the water beginning to collect at the bottom of the scrotum, and then ascending towards the spermatic cord, and by the swelling being circumscribed towards the abdominal ring; whereas, the fungus hæmatodes begins with a gradual enlargement of the testicle itself, followed by a fulness which extends up the spermatic cord. It is not in the slightest degree diaphanous, and is much heavier than a similar bulk of water.—(*Earle, op. cit.*) As the disease advances, abscesses form, and the scrotum ulcerates, but no fungus shoots out. When the inguinal glands become contaminated, they often acquire an immense size; and as soon as the skin over them bursts, large portions of them slough away. Fungus hæmatodes of the testicle is said to afflict young more frequently than old subjects. On dissection, the substance of the diseased testicle is found to present a medullary or pulpy appearance, generally of a pale brownish colour, though sometimes red.

#### *Treatment.*

It is customary to extirpate this disease with the knife; but we believe there is no well authenticated case on record of its ever having cured it.

A celebrated practitioner thus remarks:—Indeed, very little hope should be placed in the removal of the testicle; for fungus hæmatodes appears to be rather a constitutional than a local disease. Nearly every case on record has terminated fatally; and upon dissection, either the liver, the lungs, the brain, the mesenteric glands, or other internal parts, have been found affected with the same disease. In one case, dissected by Mr. Lawrence, tubercles of a similar structure to the disease in the axilla, were found in the lungs, heart, and, in short, in nearly all the thoracic and abdominal viscera, though the contents of the skull were free from disease.—(See *Cases recorded by Wardrop, Earle, Lawrence and Langstaff, in Med. Chir. Trans.*, vol. iii. and viii.)

My treatment has been limited in this disease, and therefore I am not prepared to say much from experience.

I was presented with a drawing of a case, which occurred some years ago, in the person of Mr. Mispree, of this city. It commenced on the arm, just below the shoulder, and after it had become fairly seated, Dr. A. H. Stevens, of this city, amputated or dismembered the arm at the shoulder joint. For a while, there was some prospect of recovering; but it soon returned again, and grew very rapidly. In this situation, he applied to a root doctor, by the name of Bone, in New-Jersey, who made use of a cancer plaster, which, for a while,

appeared to remove the whole tumour; but the hopes entertained were fallacious, for the disease soon returned again, and terminated his existence. His widow, whose family I have attended for some years past, informs me that Mr. Mispree, just before his decease, said that his eyes had been opened as regards the practice of medicine; and he further stated, that he regretted that he had the operation performed; and his last advice to his family was, not to employ the ordinary class of physicians, but such only as prescribed vegetable medicine.

I propose the following treatment for the complaint:

1st. The mild cancer or Ferris' black plaster; the basis of which is the extract of oak bark, combined with a small proportion of white vitriol.

2d. If this should not remove it, the alkaline extract, or the potash, as recommended under the head of Cancer, and a strong solution of the same injected into the orifices of the ulcer.

3d. Should these applications fail, apply the *mineral caustic*, mixed with brown soap, in the proportion of half a drachm of the powder to an ounce of the soap, to be well mixed or incorporated. After its application, which may be as often and as long as the patient can bear, let a poultice be applied.

The general health should be particularly attended to, as it appears to arise from a taint of the system. A purgative should be given once or twice a week, and the *alterative* syrup, and infusions or decoctions of such roots and plants as are calculated to purify the blood, such as the *Virginia speedwell*, *yellow dock*, *black alder*, *bittersweet*, &c.

## CHAPTER XI.

### FISTULA.

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THE term fistula is generally applied to those kinds of ulcers which are very obstinate in their character, and which are attended with hardness, and sinous openings or orifices, with callous edges. There are three species enumerated by surgical writers :

1. *Fistula in ano*, when situated in or near the rectum, or anus.
  2. *Fistula in perineo*, when situated in the perineum, and communicating with the urethra.
  3. *Fistula lachrymalis*, a sinous ulcer, situated in the inner canthus, or corner of the eye, obstructing the lachrymal duct.
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#### SECTION I.

##### *Fistula in Ano.*

##### *Description.*

By fistula in ano we understand, a most serious, loathsome and troublesome disease, which is located in the vicinity of the anus and rectum, and appears in the form of abscess and sinous ulcers, emitting a fetid discharge, with callous edges.

"It is a disease," says Sir A. Cooper, "in which you will be called upon to operate more frequently, perhaps, than any other. I do not consider it a disease which is very easy to treat. It very often baffles the skill of the best surgeons." Dorsey says it is very difficult to be healed; and this statement is confirmed by the many cases which remain uncured, as well as the fatality which attends it. Henry VIII., king of England, it is stated, died of this disease.

##### *Causes.*

The causes of fistula are numerous; such as costiveness and relaxation of the bowels, derangement of the liver and alimentary canal, sedentary habits, high living, plethora, bruises, piles, &c. It is often connected with, and probably produces, a pulmonary disease.

##### *Symptoms.*

The *fistula in ano* usually commences with a phlegmonous swelling or tumour near the anus or rectum, attended with great pain, hardness and acute inflammation. In this stage, it is often connected with the piles. The tumour advances slowly to suppuration, and an abscess or matter is formed.

In some cases, however, the disease proceeds till a sinus is formed, with very little pain—so much so, that the patient is ignorant of the time when it formed; but, more generally, the pain is very severe, swelling great, and suppuration very extensive; and, in consequence of the pressure upon the neck of the bladder, or urethra, there is a suppression of urine. Sometimes, there is an erysipelatous affection of the nates or buttocks, in which the fistula is very extensive; in consequence of which, mortification takes place in the surrounding cellular texture. A gallon of pus has been discharged from one of these abscesses.

Fistula in ano is more painful than a common abscess. The patient is in most excruciating pain when the *stercora* are voided; great tenesmus, or pressing down, and very often retention of urine. There is considerable variety in the size and complication of fistula. Sometimes, the sinus is confined to one side of the intestine; in other cases, it nearly surrounds it. Sometimes, the fistulous sinus is very short, penetrating the anus a little above the ring or opening; at other times, it is several inches deep, and extends near the *os coccygis*, or end of the spine; at other times, it burrows to a great distance behind the gluteal muscles. I have seen cases which appeared to extend underneath and above the spinal bone. I have seen cases, also, where the whole surrounding integuments and cellular substance were in a state of sinous suppuration, or fistulous abscess; and the flaps or edges of the ulcers projected an inch, and from which issued out the most fetid and sanious matter. This happens more generally where there is a faulty state of the constitution.

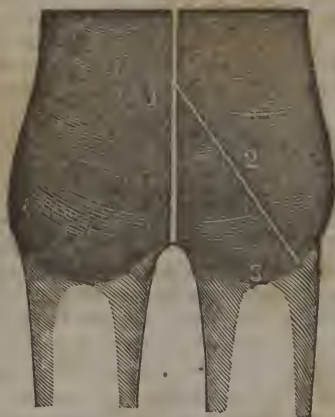
Sometimes there is a communication between the bladder, vagina, *os sacrum* and other contiguous parts; and, when so, matter issues through every opening, and the very *stercora*, or contents of the intestine, (when the bowels are very soluble,) are also discharged; thus constituting an *artificial anus*.

In the commencement of the disease, the adjacent parts are generally sound; but, whenever the ulcer has been of long duration, not only the parts about the anus, but even the perineum and buttocks frequently become diseased. This may depend on different causes; but it appears most frequently to proceed from the matter of the abscess, or sinus, not finding a free outlet, and thereby spreading along the contiguous cellular substance, with numerous sinuses running in different parts; and the matter from them is usually sharp and acrid.

The most common form of the fistula in ano, after suppuration has taken place, is an opening, or orifice, extending from the verge of the anus, and running obliquely, and penetrating it or the rectum, at a greater or less distance from its termination. This sinus has very hard, callous edges throughout its course; and the longer it has existed, the greater is the callus, or hardness. It sometimes communicates with an internal cavity near the intestine; and, although it may not penetrate it immediately, which is somewhat doubtful, it does eventually, as far as my experience goes, in every instance. If a probe be passed up the orifice, and a finger up the anus, this communication can be easily detected.



The following figure represents an ordinary fistula. Figure 1 represents the *anus*; figure 2 represents the *sinus*; and figure 3 the *nates*, or *verge* of the anus.\* The sinus, however, is usually much nearer the termination of the intestine.



Sometimes there are two sinuses in the same neighbourhood, or very near each other, and communicate together; at other times, one is directly opposite the other, or a considerable distance from it. From this opening issues a thin or thick matter, or pus, and it is often very copious, but occasionally there is very little or none for a certain period. Sometimes it will heal up for several days, then give considerable pain, break out again, and freely discharge.

These symptoms depend very much upon the general health and habits of the patient; but be they ever so good, such is the inveteracy of a *fistula in ano*, that a spontaneous cure is seldom or never known. It generally continues to increase and grow worse, until there is an absorption of the fistulous virus or matter, which is translated to the lungs, and ends in a phthisis pulmonalis, or consumption.

I know not but that one exception has occurred in all my practice. A person of this city, when I first came here, requested me to examine his fistula, which I did by passing up a probe about three inches. There appeared to be very little discharge from it, and at the external opening there was a little fleshy excrescence, or fungous flesh. He was unwilling to have any thing done for it. After some length of time, he informed me that it was then healed up, and had remained well for a year or two; and I have never heard that it has since appeared, although this is somewhat doubtful. Possibly, the act of

\* The lower termination of the great intestine, named the rectum, is so called, and its office is to form an outlet for the *fæces*.

The anus is furnished with muscles which are peculiar to it, viz. the sphincter, which keeps it habitually closed, and the *levatori ani*, which serve to draw it up into its natural situation, after the expulsion of the *fæces*. It is also surrounded, as well as the whole of the neighbouring intestine, with muscular fibres, and a very loose sort of cellular substance.

passing up the probe might have excited sufficient adhesive inflammation to have healed it ; but this, I think, is still more improbable.

Some authors have divided this disease into several varieties : first, into *OCCULT*, when the sinus opens into the rectum only ; second, into *INCOMPLETE*, when the sinus opens externally, but does not entirely communicate with the rectum ; and, third, *COMPLETE*, when there is one continuous opening from the nates through the intestine.

This distinction may be kept in view, but it is not very important for any practical purpose.

#### *Common Treatment.*

The common method of treating a fistula in ano is by a surgical operation, which consists, 1st, in making a common opening of the fistula with the rectum, or the anus. A knife, or bistoury, is forced up the opening, or orifice, until it communicates with the bowel, or intestine ; the finger is passed up the rectum until it meets it, when both are drawn down together, which makes one common opening. It is afterwards simply dressed with lint, and attempts made to heal it. 2d. Some recommend this operation alone, while others attempt to cut out the whole diseased flesh, or fistula.

This course has been pursued by surgeons for a great length of time, both in Europe and America, but the practice is neither rational, philosophical nor effectual. It is inconsistent with correct principles of the healing art ; and although, like many other operations, is sanctioned by the highest authority, it ought to be abandoned. My objections to the operation are, 1st, it is exceedingly painful ; 2d, it is dangerous, sometimes proving fatal by irritation, inflammation and mortification that follows ; 3d, it is very uncertain in its effects, seldom or never effecting a cure, even after several or successive operations have been formed ; 4th, because I have a safer, milder, more effectual, and a radical cure for the disease, without the use of the knife.

Ever since I commenced the practice of physic, I have been endeavouring to ascertain the merits of the ordinary treatment for this complaint. I have seen many on whom the operation has been performed, and some repeatedly, and I have found only one person, during all that time, who was really cured ; and he suspected that he was not sound ; besides, he came near losing his life by the extensive cutting or incisions which were made. He informed me that such was the fetor occasioned by the wound made by the operation, that it was almost impossible to stay in his room. Another man informs me that he had been operated upon five times for the fistula in ano, and still he was not cured. Among the number of patients afflicted with this complaint, who have applied to me, a considerable proportion of them had undergone a formidable operation for it, and instead of having received any benefit, were only injured ; and this effect must be obvious to every rational person who reflects upon the pathology or the nature of the disease. I would ask how the act of merely dividing a diseased or indurated mass of flesh, can remove it ? especially when we take into consideration the morbid connexion that always exists between contiguous parts. It is well known that a simple incised

wound readily heals ; and if inflammation be the object of performing the operation, as some assert, it is quite insufficient to accomplish the purpose. Not only so : as soon as there is a common opening made between the fistula and the anus, it is very difficult to apply such dressings to the ulcers as are calculated to remove it. They cannot be applied directly to the diseased parts, and if they were, when the fæces pass the bowels, they would probably be removed.

It is true, I have heard of some cures performed by the knife, but upon strict inquiry, and upon the minutest examination, I know not that I have ever witnessed a solitary case in which a permanent cure had been effected, although occasionally, I think, the suppuration that follows it, has proved effectual.

Again, how is it possible that a cure can be effected, when the sinus is highly situated, very extensive, and beyond the reach of the finger. In such a case, there is no chance or opportunity of curing it.

The after dressings, it is stated by every patient who submits to the operation, are as painful as the operation itself ; and this he must daily submit to, besides the necessity of being confined to his room or bed for a great length of time. Not only so : the consequence which follows such treatment, is sometimes deplorable. The sphincter ani is often cut, and the patient is unable to retain his stools, and they pass off involuntarily, with other pernicious effects which might be mentioned, such as hæmorrhage or bleeding, in consequence of cutting an artery.

What man, then, in his sober senses, will suffer a knife to be thrust up his bowels, and the parts ripped open and mutilated, without any prospect of a cure, when it can be removed by an easy, safe and scientific course of treatment ?

The practice, then, is cruel, unnecessary and wrong. I know, by long and repeated experience, that the fistula is curable by means which are more expeditious, more easy, and neither hazardous in the use, nor productive of evil in the event. It is true, the method which I pursue will dispense with the knife, such a favourite with many, almost wholly and entirely ; but it will be attended with success, and produce that which every patient has a right to expect from his physician or surgeon—a speedy and permanent cure, without confinement to his room or house, but, on the other hand, with ability to attend daily to his ordinary business.

I shall now give an improved method of treating this disease, which I have found altogether superior to that now pursued, and which has invariably and infallibly, in my hands, succeeded in every stage of the complaint ; and that, too, when our most popular surgeons have been unable to cure it by repeated operations.

### *Reformed Practice.*

The treatment of fistula depends upon the stage in which we are called to prescribe. A very different course is required in a state of inflammation, from that of suppuration or abscess. I shall first treat of the means to be employed in its incipient, forming, or inflammatory stage. First, moderate excessive inflammation ; second, diminish

painful or urgent symptoms ; third, promote suppuration if the swelling cannot be discussed ; to accomplish which, the *discutient ointment* may be first applied to the swelling ; immediately after which, let it be steamed, or fomented, with the following :

Take *Tansy*,  
*Wormwood*,  
*Horehound*,  
*Catnip*,  
*Hops*, a handful of each.

Add water, and boil until the strength is extracted. Put the whole into a small or suitable sized vessel, and add about half a pint of soft soap. Place a narrow piece of board over the vessel, or tub, and let the patient sit over it fifteen or twenty minutes, with a blanket thrown around him to retain the steam. A *chamber*, or bed pan, is well calculated for this purpose. The process, or steaming, must be repeated morning and night, or as often as the pain becomes severe.

This operation, in almost every case, immediately relieves the patient ; even when the parts are so tender before, that they cannot bear the weight of the bed clothes, it so much diminishes the irritability and soreness, that the patient can afterwards bear considerable pressure upon the swelling. In a word, it usually acts as a charm in the most painful stage of the disease ; it not only allays the pain, but promotes either resolution or suppuration.

As soon as the patient has been thus steamed, apply the following poultice : Take *cicuta leaves*, simmer in either milk or water, until they are soft ; then add equal parts of powdered *linseed* and *elm bark*, sufficient to form a poultice of proper consistence. Let this be applied tepid, or blood warm. About a table spoonful of *sweet oil* may be added. It is cooling, emollient, and prevents it from adhering to the skin.

It will be necessary to renew this poultice morning and night.

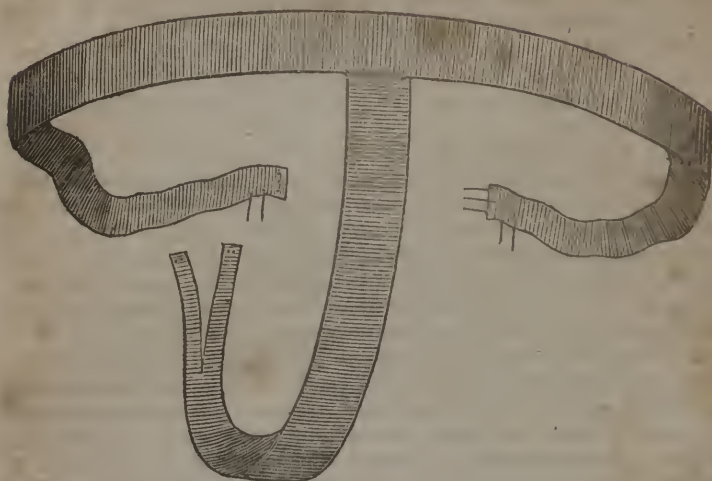
I have found a *ley* poultice excellent, in many cases, where the other did not agree with the patient.

Every time either poultice is applied, let the *discutient ointment* be rubbed on the swelling.

It will be necessary, for the sake of convenience, as well as to secure the dressings, to use a bandage, made by passing a piece of linen, of a suitable width, just above the hips, and fastened on the right or left side of the abdomen, with tapes or buttons ; a piece fastened to this behind, and brought between the legs, and secured to the bandage around the body ; likewise in front, or before, in the same manner. This will effectually secure the poultice and the other dressings.



The following figure represents this bandage, and will enable any person to prepare it in a few minutes.



When the pain prevents sleep, and should not the means recommended sufficiently mitigate it, a portion of the *diaphoretic powders* may be given at bedtime, or an opium pill. *Perspiration* should likewise be promoted. The feet should be daily bathed, and warm tea drank, and the skin thus kept moist.

It will be very necessary also to attend to the bowels: an emollient *purgative*, should be given every day or two; and the best is the *cold pressed castor oil*; the dose of which is an ounce.

Sometimes the parts become so swelled that any kind of physic causes much pain. Under such circumstances injections must be relied upon.

With this treatment the inflammation will gradually subside, and matter or an abscess will form, which is usually very large and extensive. This may be known by a subsidence of the pain, redness, and the tumour becoming softer, yielding readily upon pressure. Sometimes the pus or matter concentrates more especially to a certain part of the swelling, which projects a little, assuming a white appearance. When these symptoms appear, it is recommended by surgeons to make an incision and let out the matter, and this I have occasionally done. But I prefer, where the patient is willing to wait, to let the abscess burst spontaneously, or by the aid of the poultice. There appears to be less *callus* or hardness remaining, and the sinus is not so liable to close. There appears to be a necessary digestive process for the fluids to pass through before matter is formed, or is in a proper state to be expelled.

It is surprising to see what a vast quantity of matter these abscesses contain, and how fetid the discharge is. I once opened one in a female, who had been previously cut for the complaint, which poured

out a stream of the most offensive fluid, and rendered it almost impossible to continue in the room. I know not but it soon discharged a quart.

It is equally astonishing how extensive oftentimes are the ravages of this disease. I have seen the inner portion of the rectum completely denuded as far up as could be seen. I have seen it destroy the parts from the anus to the testicle, as well as for a great distance around it; also, to extend into the vagina of women, and destroy the adjacent integuments to a considerable extent, in which case a portion of the matter is discharged by the vagina. When the disease becomes so seated or extensive, there is apt to be an absorption of the fistulous virus or matter into the system, causing great constitutional debility and disturbance. Sometimes it is translated to the lungs, and terminates in the consumption. Indeed, this is the most usual method of its proving fatal. Having, then, arrived at a stage of the disease in which suppuration has taken place, there must be a variation in the treatment. I mean, after the matter has been well evacuated from the abscess, and the pain, swelling and inflammatory symptoms have subsided; for until this has taken place, the same treatment must be continued, especially the *poultice*.

It sometimes happens, that even a real fistulous abscess will heal up after a short time, but generally there remains an indurated tumour, in the centre of which there is a small hole, orifice, or sinus, from which the matter discharges, and which extends a greater or less distance from the verge of the anus, running obliquely to the *intestinum rectum*, communicates with it, lower or higher up, or at a greater or less distance from the end of the bowel or anus. The peculiarity and difficulty of curing this disease is the *hardness* or *callus* which lines the sinus. It is sometimes almost as hard as ligament, or as tough as a piece of whitleather, and a person familiar with the disease can trace the course of it with his finger from one end to the other, without ever seeing it. It is owing to this characteristic symptom, that opening it with the knife or bistoury with the rectum is so ineffectual.

Our next object, then, will be to remove this hardness, and place the ulcer in a condition to heal; to effect which, we have only to act in the capacity of a servant to nature. We must watch with an eagle's eye her attempts to remove the complaint, and all we have to do, is to aid her in her efforts, when she is inadequate to the task; and in a fistula, her attempts to restore health appear, in almost every case on record, to be too feeble, and it therefore becomes our duty to render assistance.

We see plainly what she endeavours to accomplish, which is such a state of inflammation and discharge as will remove the callous edges of the orifice, and by adhesive inflammation agglutinate, or unite the separated parts together. Then, in obedience to the dictates of this great teacher of the healing art, we must first prevent the sinus from closing; second, establish a greater, or *preternatural* discharge from it. It is not sufficient to create inflammation alone, for this is insufficient to heal the sore. The diseased parts must be first re-

moved, before it can be placed in a state for healing ; in other words, we must remove the offending cause before a cure can be effected.

The first of these objects (the act of keeping open the fistula) may be accomplished by introducing a suitable sized tent, made of the ravelings of linen, or thread ; or a piece of twine will answer. It should be made small, or pointed, at one end, similar to a probe, and drawn through beeswax, or some plaster of a proper consistence, in order to stiffen it ; and then it is to be introduced as far up the sinus as possible, and a very small portion left out ; after which, a little lint should be placed on the end of it, and a plaster of the *black salve* applied. On this a compress should be placed, and secured by the bandage, as before mentioned. The tents should be gradually enlarged, to fill the opening. Generally, when they are first introduced, they are required to be exceedingly small, and can be introduced only a very short distance ; but the orifice becomes more open, and, in a short time, larger ones can be used, and they will penetrate to the whole depth of the ulcer : nor will they excite any pain, as many might suppose ; for the matter soon renders them soft after their introduction. It is not sufficient to introduce these *tents* without any application upon them. It is necessary to make use of some stimulating agents ; and, for this purpose, I employ, with decided benefit, an *alkali*, or *preparation of potash*. Let *ley*, made from hickory ashes, be boiled down until it is perfectly dry ; then let it be removed from the vessel, pulverized, and kept from the air. A few grains of this must be put upon the tent every time it is introduced, which should be morning and night. It soon alters the nature of the discharge, rendering it more healthy, the fistula less irritable, and the inflammatory state of the system is subdued.

It excites sharp pain for a few minutes ; but, instead of operating like common *caustics*, causing greater inflammation, it removes it.

The *carbonate of potash* will answer the purpose, but I think does not act so kindly as the preparation just mentioned. In the next place, the syringe must be resorted to, to aid in curing the complaint ; and we may commence by injecting into the sinus a solution of the article just named. About one drachm of the *alkali* may be dissolved in eight ounces of rain-water, and injected once a day, and the strength of it gradually increased, as the patient can bear it. *Weak ley* answers very well. The strength of it can be gradually increased, as may be required : but there is no danger of using it very concentrated ; for the cure is expedited in proportion to its strength. But we must be governed by the feelings of the patient ; for they will not permit its being used too strong, as it might cause too much pain. This liquid should be injected once or twice a day.

Soon after a fistulous abscess breaks, the parts are too irritable to bear the use of the syringe. A little time should be allowed for the soreness to subside ; and I often commence with the use of injections consisting of *Castile soap* and *water*. Once a day, let the following decoction be injected :

Take Blood-root—(*sanguinaria Canadensis*),

Root of wild hellebore—(*veratrum viride*),

Root of wild, or Indian turnip—(*arum tryphillum*),

Bruise, and make a strong, concentrated decoction, by boiling several hours. Let this be injected in the same manner. This course must be pursued as long as the fistula continues to grow better; although, such is the insidious nature of the complaint, that, after the painful symptoms have subsided, the patient is unable to decide whether he is improving or not, although the callous, or hardened edges of the fistula are daily diminishing.

The best and only sure criterion to ascertain whether the morbid or diseased organization has been removed, is the quantity of matter discharged when no dressings are applied; and therefore, when the fistula becomes *pitted*, or *depressed around the edges*, and the hardness in a measure gone, a trial may be made to heal it, by omitting the use of the tents and the syringe. The *plaster*, or *salve*, should only be applied. This will enable the practitioner to decide whether the discharge arises from the fistula itself, or whether it arises from the stimulating properties of the agents or medicine made use of. For *I may say, in a word, that the principle of cure depends upon the act of making, and keeping up, a permanent issue, or drain, upon the fistula, until the morbid nature of it is so destroyed, that the edges of the sinus agglutinate and heal.* In general, however, after these applications have been used a sufficient length of time, the discharge of matter will gradually diminish, and the fistula will close, in spite of the stimulus arising from the dressings.

Sometimes there is a fistulous abscess, which does not appear externally, but opens into the rectum. In operating for this, surgeons recommend an artificial sinus, or opening, to be made, to enable them to operate. I attended one case where this operation was performed twice, with only injury to the patient. I afterwards treated him according to the principles here laid down, and effected a radical cure. When a case of this kind presents, the anus or rectum must be opened or distended with the fingers, and drawn out as far as possible, and held in this situation a short time, which will, in most cases, bring the orifice in sight; and, when so, let the same dressings be applied as before recommended. In general, I roll up a small piece of lint, and introduce it into the sinus with a probe. When the opening cannot be seen, its situation may be ascertained by either the finger or probe, and then inject a solution of the *alkali*, and apply it on lint. It will occasion no injury to the sound parts, but will act with considerable power upon the fungus and spongy flesh of such an ulcer; for in general, when thus situated, they are soft, having but little callus. It often is the case, that such sinuses extend into an abscess situated superficially. And, when this course does not effect a cure, my method is, to bend a silver probe, pass it up the sinus, and press the end of it outward, or externally, and the end of the probe may be felt upon the finger, or the integuments may be seen to rise when it is pressed upon. The probe being thus in the opening, and felt, or seen externally, a counter opening may be made, either by a probe itself, or by cutting down upon it with a lancet, and thus converting it into an ordinary fistula, which must be treated in the same manner as others.

Again: it is sometimes the case, that an abscess forms near the



rectum, and finds its way externally, without penetrating it. This, by surgeons, is termed an *incomplete fistula*; but I have to remark, in relation to it, that this is a very wrong name, as it constitutes a perfect fistula in every respect; and although it does not communicate immediately with the rectum, (which I have almost always found to be the case,) yet, in a very short time, it invariably works its way through. Indeed, it sometimes has been a matter of doubt to me, whether a case of this kind ever occurs; for it is one of the characteristic symptoms of the disease for the sinus to penetrate some cavity or canal.

The treatment for a fistula in this state (should it happen) is the same as any other.

It is always best to wait, before dressing the fistula, till there has been an evacuation from the bowels, provided this generally takes place daily, and in the morning, as the applications are sometimes disturbed by the passages.

The parts should first always be well washed and cleansed with soap and water, to which a little spirit has been added.

It is better for the practitioner to attend personally to the dressings, if practicable, as this will facilitate the cure. But, in more than half the cases which have been attended, I have been unable, from a multiplicity of business, to do it, and have therefore committed it to the wife, husband, or a friend; and, although a cure is invariably made, yet it is often much more protracted. A person well experienced in the treatment can cure it in half the time which will be required for any one who must first be instructed, and then act only under the supervision of the physician.

In making objections to my practice, some have asked, how can my application be made to a *fistula* when it runs very crooked or obliquely, or perhaps passes off laterally into the flesh? In answer to which, I have to observe, that I know not that any such case occurs. At any rate, I have never yet seen a fistula in which I could not introduce the medicine to the very extent or bottom of it, either by the use of the *syringe*, or by some of the other means recommended. But, should this not be the case, if the applications do not penetrate to the bottom, provided a cure is performed, the *modus operandi* of the agents employed is of little moment. It is sufficient for us to know that they have the desired effect.

Should, from any cause, the disease become stationary, or should it not improve as fast as desirable, a few grains of the *mineral caustic* may be applied two or three times a week, and the following plaster used: take the

Inspissated juice of the poke-berry—(*phytolacca decandra*),

Extract of blood-root—(*sanguinaria Canadensis*),

equal parts; mix or incorporate well together. Spread on linen, and apply night and morning, instead of the plaster first mentioned. These last dressings will excite a pretty free or copious discharge from the fistula; and, when the powder is applied to the tent, it excites considerable pain for six or twelve hours, after which, it begins to discharge very freely, and, in a few days, very much alters the character of the ulcer. In using this, it sometimes becomes necessary to apply

the *slippery-elm bark* poultice, to remove the inflammation which it creates; and it should be used at any time, in the course of the disease, when there are inflammatory symptoms arising from any cause whatever.

It is necessary to administer internal, as well as external applications. A *purgative* should be given once a week, and, in addition, an alterative course pursued, to remove any morbid taint that may exist or give rise to the complaint; for this purpose, nothing is better than the *alterative syrup*, which the patient may take three or four times a day, as directed under that head.

I have occasionally taken another method to expedite the cure. Where the patient is very anxious to have the ulcer healed in the shortest space of time, I have pursued the following course. After the dressings already mentioned have been applied a sufficient length of time to promote a free discharge, and the callous edges have been thus broken down, or measurably destroyed, and after it has become enlarged, and the connexion between it and the rectum rendered small which follows this treatment; in order sooner to bring the divided edges of the fistula in contact, or to promote the healing of it more readily, I take a probe, bend it, and introduce the blunt edge through the sinus into the rectum; and after dipping the little finger in sweet oil, let it be slowly passed into the anus until it comes in contact with the end. Let it be held a few minutes in this situation, to relax the muscles, which it does most extensively and almost incredibly; then push gently upon the probe with one hand while pressure is made upon the end of the probe with the other, which is within the anus; bend it at the same time that the end is brought externally, or out of the rectum; which, when done, tie or fasten to the end of it a piece of silk or thread, or put it through the eye. The probe then should be drawn back, in the same manner in which it was introduced, taking care as it is returned, that it be a little rebent, in order that it may easily return.

This operation brings the silk or thread through the sinus and the rectum as a matter of course. Sometimes it can be passed through in a very few minutes; at others, it requires a longer period, and is somewhat tedious, but can always be effected by a little perseverance.

The ends of the ligature should now be tied and a little tightened, after which let the black plaster be applied with a compress and bandage to secure it. I have tried various ways to introduce the ligature by means of certain instruments, wires, &c., but I have always succeeded best with a probe. A gold wire may be passed through, instead of silk or thread, but I know not that it has any advantages over it.

The ligature, of whatever kind it is, should be a little tightened in order to accomplish the object designed; which is to make one common opening of the sinus with the intestinum rectum.

The advantages of this will be readily perceived. First, it creates, or establishes, a permanent drain on the seat of the disease; second, it excites adhesive inflammation, and has a tendency to agglutinate or heal the fistula; and, third, laying the fistula entirely open with the rectum, it heals more readily than in a state of sinus, by admitting

healthy granulations to shoot up from the bottom of the sore, without any obstruction from pus or any other cause. According, then, to this method of practice, the ligatures are to be tightened, or twisted, from time to time, by means of a small piece of metal or wood, to which it should be tied in the centre; or it is sufficient to twist the ligature as much as the patient can bear, and secure it by applying the black plaster. It produces some inflammation, and the discharge is considerably increased.

This process compresses the part of the rectum usually divided by the bistoury, so as to occasion ulceration and an absorption of the part. In this way the sinus gradually heals above the ligature, and by the time the parts are divided, or ulcerated through, if the callus has been previously destroyed by proper treatment, the cure is nearly, or quite completed. It is very necessary to introduce lint into the part divided, to prevent them, if possible, from uniting, or healing, too soon, lest some portion of the disease should remain.

I have, in one or two instances, divided the parts with a bistoury; for, after the fistula has been treated as laid down, such is the enlargement of the opening, with the removal of the diseased parts, that very little pain is produced by simply dividing it. But I prefer the other method; first, because the parts do not unite so readily as they do after an incised wound; second, because the patient almost invariably shudders at the thought of using a knife; and, lastly, the ligature contributes far more to eradicate the disease by the adhesive inflammation and ulceration which it produces, and which is not effected by simply dividing it with the bistoury.

Let not the advocates for the knife say, from this statement, that this treatment resembles theirs, because it *does not* scarcely in the *least* respect, inasmuch as simply dividing the parts is the least distinguishing feature in the improvement; nor do we recommend this, as absolutely necessary. I formerly cured the disease without any such practice, and now only advise recourse to be had to it, as before intimated, where it becomes necessary to eradicate the disease in the shortest space of time, or where it assumes an unusually obstinate character.

A *fistula in ano* is certainly one of the most obstinate, the most loathsome, and the most serious diseases that afflicts the human body; and, in consequence of its inveterate nature, it requires considerable time to effect a permanent cure, especially when the disease has become deeply seated. No definite time can be given in which it can be cured. In some cases it can be effected in a few weeks; others will require a number of months. But where the treatment here laid down is strictly pursued, it will infallibly cure the disease.

I have thus given the description, causes, symptoms, with the common and reformed treatment of *fistula in ano*; and I must now submit it (as I do the treatment of other complaints) to those who have honesty and candour sufficient to appreciate, or test, the practice which I have recommended; and I hope they will ascertain, by experience, the comparative merits of both the old and reformed, or improved method: hoping that prejudice will not so far blind the eyes of the



practitioner as to prevent him from giving the treatment of this, or any other disease, a fair and impartial trial.

We have experience and facts for our superstructure; and we, therefore, solicit any one to overthrow it if possible, by fair and honourable means.

My mode of treating the fistula in ano, in particular, has excited much attention, and has induced some physicians, who have had the most indubitable evidence of its efficacy and superiority, to request me to publish it to the world.

I have done so, not only as regards this, but other diseases; and I, for the merits of the same, must appeal for a decision to an enlightened, a candid and impartial public.

As considerable pains and exertions were taken, some years ago, by one of our most distinguished merchants, to extend the benefits of our improved method of treating *fistula* to other parts, and as he was defeated in his philanthropic designs by the envy and jealousy manifested by the most egregious misrepresentations, falsehood and calumny, I shall now give some statement of the facts, by way of illustration.

Fifteen years ago, when I resided about sixty miles from this place, I attended a gentleman from this city, who was afflicted with a fistula in ano, (for which a surgical operation was proposed as the only remedy,) and I succeeded in effecting a cure. On his return to New-York, he communicated the fact to another citizen, a man of considerable note and standing in society, by the name of A. L. Degrove, who had been, for many years, a collector of the *fourth ward* of this city, and who stated, that if I would come to New-York, and cure him, he would pay me very liberally. I accordingly came, commenced the treatment of his complaint, and soon removed it. According to his promise, he gave me a check upon the bank for a handsome sum of money; and about the same time, in gratitude for the services rendered, presented me with a liberal donation. Nor was this all; so anxious was he for his fellow men afflicted with this loathsome and distressing disease, to have the same benefits extended to them, that he went in every direction of the city to solicit those having the disease to apply to me for medical aid.

Being a man of considerable influence, he induced almost every one to apply; and in consequence of having treated these successfully, my reputation and practice became established; and that, too, in the face of much opposition from the selfish, the illiberal and prejudiced portion of the faculty. Mr. A. G. THOMPSON, one of the most wealthy and respectable merchants or auctioneers of this city, having ascertained the merits of our practice in this and some other complaints, expressed an anxiety that its benefits should be extended to others; and that I should meet with a suitable remuneration for the discoveries and improvements made in the healing art.

As he had very little hope that our government, or any body of men, would bestow their patronage for any improvement of the kind; and entertaining an exalted opinion of the character of ALEXANDER, THE LATE EMPEROR OF RUSSIA, in patronizing every thing useful, or calculated to benefit mankind, he applied to Mr. Bogart, then Vice



*Consul of Russia*, and requested him to call personally upon some of the persons whom I had cured, and obtain their certificates. Accordingly, I introduced him to many of the persons whom I had cured; whereupon their certificates were procured, and the Consul attached the Russian seal to them. These were forwarded, with a letter from Mr. Thompson, to the *Emperor Alexander*, giving a brief history of the treatment. In a few months an answer was received from the Russian court, directed to Mr. Poletica, the Russian Minister, then at the city of Washington, stating, that if I would repair to Russia, I should be rewarded according to *deserved merit*. This information was communicated to Mr. Thompson, from Mr. Poletica, through Mr. Lomonosoff, the Russian Consul General at Philadelphia.

While calculations were making to undertake this expedition, with a view to introduce this practice in Europe, intelligence of the fact, or the transaction, was communicated to Dr. David Hosack, or some inquiries made of him respecting the improvement; and although he professed great friendship for me at the time, having attended his lectures when Professor of the Theory and Practice in the University of the state of New-York; yet, in consequence of his prejudices or misrepresentation, the expedition was broken up, and I have been under the necessity of suffering the consequences of such injustice and cruel conduct ever since. But it now affords me great pleasure to have this opportunity to lay these facts before the public, and I hope eventually before *Nicholas*, the present *Emperor of Russia*. Ten years had elapsed before I ascertained the reason that we were defeated in our attempts to introduce this practice in Europe. The circumstances were communicated to me, during my last visit to Philadelphia, through Mr. Lomonosoff.

In concluding this chapter on fistula, I shall depart from my usual method, and briefly report a few cases, to illustrate the principles laid down. The limits of this work will not permit me to give them in detail.

#### CASE I.

Mr. *Henry Crocheron*, merchant, recently residing at the corner of *Whitehall* and *Front streets*, was attacked with a fistula, termed by surgeons *occult*, in which the fistulous abscess burst into the rectum, from which issued constantly a sanious matter. He applied to a surgeon of this city, Dr. M\*\*\*, or F\*\*\*, who made an artificial sinus at the verge of the anus up to the ulcer; or his attempts were to effect this. He then cut down in the usual manner, and afterwards dressed it with lint. After trying a length of time to heal it, he could not succeed, and performed another severe operation without any benefit.

In this situation I was called to him, and such was the difficulty attending the disease, that I was unable precisely to discover its state, situation, or extent. The orifice extended some distance up the rectum, so far that I could not discover its course; but from the quantity of the discharge, and other symptoms, it was evident that there was much mischief taking place in the deep seated parts. I commenced the treatment by applying the *alkaline powder* on lint. I

pushed it up with the probe, until I was satisfied that it reached the sore, from the pain which it created. I also injected a solution of the same article as before mentioned. It gradually mended, and in a few months he was well, and has remained so a dozen years.

## CASE II.

Mr. *Anthony Graves*, then residing at the corner of *Oak* and *Catharine streets*, was attacked with a fistula which was exceedingly painful, and which confined him to his bed. Great swelling, inflammation, and abscess succeeded, which left the part in a very diseased state. There were two or three sinuses. Two surgeons called, and told him that there was no other alternative, but to have it extirpated by the knife. A gentleman whom I had cured, hearing of his situation, called, and recommended him to have the disease cured without an operation. But, such was the confidence that he had in his physician, that he found it almost impossible to induce him to have recourse to any other mode of treatment. Upon his offering, however, to pay the bill in case I did not succeed in effecting a cure, he finally consented that I should attend him.

I commenced the treatment by subduing the inflammatory symptoms; and then, by applying the other medicine recommended, the ulcer soon healed, and he became sound in three or four months.

The gratitude shown by this family ever since, has, to me, been a source of great satisfaction. In addition to having been liberally compensated for my services, I have repeatedly received donations; and so grateful has been this family, that they have presented the person who recommended me with one or more handsome presents.

## CASE III.

Mr. *William Gallaudet*, now merchant in *New-Rochelle*, had been for some time labouring under a fistula in ano, for which a surgical operation had been performed, by Dr. N. Smith, but he was only rendered worse by it. He applied to me, in a very deplorable condition. A fistulous ulcer extended far up the rectum, for which an operation had been performed, and upon examination another was found, which had been entirely overlooked by his physician. He was very much reduced and emaciated when I first saw him, and his general health had suffered exceedingly. There was a constant discharge from the fistula, and no prospect of his recovery without a change of treatment. I applied the usual dressings, which acted favourably, and soon produced an amendment.

He daily grew better in every respect, and in a few months he was able to resume his business, and he has been perfectly sound for many years.

## CASE IV.

Captain *Lyon*, master and owner of one of the ships which sails between this, New-Orleans and France, applied to me a few years

ago to be treated for the fistula in ano. The parts for some distance around the anus, were extensively diseased, and he had had it for a length of time. He had applied to one or more surgeons, who told him there was no other method of curing him than submitting to an operation by the knife. I commenced by treating him with the usual applications, and after the sinuses were opened, the parts were found in a very diseased state. The medicine, however, soon brought them into a healthy condition, and in a few months he was perfectly cured.

In one of his voyages to France, he afterwards informed me, that he went to Paris, and showed the parts, which had been the seat of the fistula, to one of the oldest and most popular surgeons in the city, who said to him, "You have no fistula there;" in other words, you are perfectly free of it. I think he had three or four different openings, or sinuses, one or two of which extended two inches up the rectum.

## CASE V.

Mr. *Jacob Anthony*, cashier or teller in the *United States Bank*, had been afflicted some time with a fistula.

Dr. V—— B——, his family physician, recommended him to submit to our course of treatment. He applied, and upon examination I found that the fistulous sinus was extensive, and penetrated in a very crooked direction, which rendered the cure more difficult. There was much callus attending it, and a constant discharge. Our usual dressings were applied, and although he was attended for a considerable length of time, a permanent cure was effected, and he has been well for many years.

## CASE VI.

Captain *Gregory* was recommended to submit to our course of treatment, for a very obstinate fistula, for which he had been labouring for some time, by Dr. *Conger*, his family physician, who had seen the effect of our practice on a friend of his, whom I had cured of the same complaint. When I saw the patient, I found the disease had committed very great ravages. The integuments had been destroyed from the verge of the anus to the perineum, and which had left a large, flabby, fistulous abscess, and which was connected with a great cavity underneath. The usual course of treatment was pursued, which entirely cured him. After the cure had been performed, I conversed with the physician who recommended him, Dr. *Conger*, and he gave the following opinion of the course of treatment, in comparing it with the common or old method. "Your mode of treating the fistula," said he, "is the most scientific."

## CASE VII.

Mr. *Meyers*, who then resided in *Water-street*, near *Catharine*, had applied to Dr. *M.*, of this city, a noted operative surgeon, who performed a most severe operation without any benefit, afterwards ap-

plied to us for the treatment of his complaint. One or two orifices extended very far up into the rectum, callous edges, great discharge, &c. From its extent and different ramifications, we found it very difficult to treat ; but we finally eradicated it, and he has been well for many years.

A few hours ago, a lady, recommended by the same gentleman, called with her daughter, afflicted with a fistula, and requested me to treat it, stating that she had applied to several practitioners, but none had cured it.

## CASE VIII.

Captain *Knapp*, who owns and sails a vessel from this place, was confined a length of time to his bed with a fistula. I was called to see him, and found that he was afflicted with an ordinary fistula in ano. I gave him my view of his disease, and our mode of practice, and he seemed inclined to submit to it ; but, being attended by his brother-in-law, Dr. F., and Dr. M., professors of surgery in the medical school of this city, he concluded first to ask their advice, whether there was any other method of curing the disease than an operation by the knife. Upon their next visit, he asked their opinion, and they told him that it was impossible for the disease to be cured without an operation, and he therefore submitted to one, which was very formidable, and which, together with the subsequent treatment, reduced him very low, and confined him to the house for many months.

I heard no more from this man from the time I was first called, till nearly a year had expired, when he called upon me, and gave a statement of the course which had been pursued by these physicians. I examined his fistula, and found that he had been extensively cut ; the wound being several inches long, and gaping widely, with indurated edges, a free discharge of pus or matter.

I applied our mildest dressings to the wound and fistulous ulcer, which improved their condition, and after a few months it healed ; and during the whole time he was enabled to attend to his ordinary business. He regretted exceedingly that he had not applied at first. He said that it had cost him, taking into account the bills of his physician, board and loss of time, about a *thousand dollars*, and after all, only made worse.

## CASE IX.

Mr. *Mahlon Day*, bookseller, residing in *Pearl-street*, near *Frankfort*, was attacked with a fistula in ano, attended with all the ordinary symptoms. He applied to the late Dr. Kissam, a noted operative surgeon, who immediately performed a surgical operation. He afterwards dressed it with lint, in the usual manner ; but it did not heal ; and the reason of which is explained in this chapter, under the head of "common treatment."

Some time after this, he requested me to attend him. I pursued with him the usual course of treatment, viz. established a preternatural discharge upon the disease, which soon brought about a healthy



state, and completely eradicated it, and he has been well for many years. In company with him the other day, he voluntarily offered to give me a certificate of the cure, but believing them to be of very little service, I declined receiving it.

## CASE X.

Mr. *Mather*, ink manufacturer, now residing at the corner of *Greene* and *Prince streets*, was attacked with pain, swelling and inflammation near the rectum, which continued to increase until he was thrown into the most excruciating agony. It was exceedingly irritable, became enormously large, and, after a length of time, suppuration took place, but left a very large abscess with two openings, one or both communicating with the rectum, and which were both very extensive. He applied to a physician or surgeon, who, as a matter of course, proposed an operation; but, understanding that some had been cured without one, he concluded to make trial of the same process, and accordingly placed himself under our care. I pursued the usual course in treating it; and although I found it exceedingly obstinate from the induration, with the crooked direction in which the sinuses extended, as well as their great depth, after a few months was perfectly cured, and has been sound for many years.

After the cure was performed, I requested one of our most noted operative surgeons to examine it, which he did; and, under an impression that he had been cured by a surgical operation with the knife, he exultingly exclaimed, "that is cured, and handsomely done; who performed the operation?" or words to that effect. Had this surgeon known that it had been cured by any different method than that laid down by authors or practitioners, he would not, I presume, so readily have given his testimony in favour of the method pursued to effect it.

## CASE XI.

Mr. *Clarke*, a wholesale grocer, store at the corner of *Roosevelt* and *Front streets*, had been a long time afflicted with a fistula in ano. He had submitted to one or two surgical operations, without having been cured. I attended him, and treated his disease as usual, which entirely removed it; and he has remained well for ten years.

## CASE XII.

Mr. *George Peterson*, then leather inspector of this city, had been for some time labouring under a fistula, for which he was told there was no other remedy but the knife. The sinus, as usual, communicated with the rectum, with hardness, pain, inflammation, discharge, &c. My usual course permanently cured him, and he has remained well for many years.

## CASE XIII.

Mr. *Emmons*, grocer, residing at the corner of *Hester* and *Ludlow streets*, was attacked with a fistula, and called upon a surgeon of this

city, who told him that he must submit to a surgical operation to have it removed. He afterwards applied at our institution, and the ordinary course of treatment entirely cured him.

## CASE XIV.

Mr. *Allen*, a mason by trade, now residing at the corner of the *Bowery* and *Grand-street*, had been, for a length of time, labouring under a fistula. It was very painful, swelled and inflamed, and there was a constant discharge from it. He was treated in the ordinary manner, and cured, and has remained well for a number of years.

## CASE XV.

Mr. *Lewis*, now residing in *Fulton-street*, opposite the *Fulton market*, had been afflicted with the fistula for some time, and had extended some distance towards the spine, communicating with the rectum, a considerable distance above the sphincter ani. Its situation was such, that it seemed almost impossible to use the medicine in such a manner as was necessary to remove it; but, by applying it very far up the rectum, where the sinus apparently communicated with it, the fistula began to improve, and eventually healed.

## CASE XVI.

Mr. *Murdock*, collector of the 13th ward, was attacked with a fistulous abscess, which his family physician was unable to cure. After submitting to our course of treatment, he soon began to mend; and the fistula, as far as I now know, is sound.

## CASE XVII.

Mr. *Kline*, of this city, an habitual drunkard, applied to me to be treated for a fistula. In consequence of his intemperate habits, it seemed that the disease could not be cured. But after a few months he entirely recovered.

## CASE XVIII.

A merchant from *Columbia county*, near *Hudson*, placed himself under my charge, for the treatment of the same disease, and the course pursued entirely eradicated it. I have seen him frequently since, and have ascertained that he remains well.

## CASE XIX.

An elderly man, name not recollected, applied to our office some time ago, afflicted with this complaint, who stated that he had been operated upon five times, and yet was not cured. We treated him as usual, and in the course of a few months he recovered.

## CASE XX.

Mrs. *Nash*, of this city, had a fistula in ano, for which she supposed there was no remedy without the knife. In six weeks after submitting to our course of treatment, the fistula was sound.

## CASE XXI.

Mr. —, name not in our possession, wheelwright by trade, then living in *Crosby-street*, had a most inveterate fistula ; the pain, swelling and inflammation were very great. The same course of treatment as laid down in this work restored him to health in a few months, and he has remained so eight or ten years.

## CASE XXII.

Mr. *Peter Graham*, of this city, applied to us with a fistula in ano, attended with considerable discharge, callosity or hardness, and the sinus extended up to the rectum. He applied to Dr. M—, a noted surgeon of this city, and two other physicians, who were unable to cure it, and who proposed a surgical operation. We treated it in the usual manner, and in a short time it healed. The patient is now before me, who states, that it has not broken out or reappeared since, a term of four years ; and he further states, that he feels confident that it never will.

## CASE XXIII.

Mr. *Pray*, shoe dealer, of this city, was attacked with a fistula in ano, which impaired his general health, and affected one side and leg so extensively, that he was rendered very lame. The discharge was profuse and fetid, the abscess large, and it burrowed very deep into the surrounding cellular substance. It had existed for a length of time, and continually grew worse. His only hope of a cure was by a surgical operation ; but, from seeing some who had been cured without the knife, he placed himself under our care, and in a few months all the unfavourable symptoms subsided, the fistula healed, and it has remained well for many years.

*Fistula in the Perineum.**Description.*

By this disease, we understand an abscess which terminates in a fistulous sinus into the perineum, and penetrates the urethra, which carries the water off from the bladder.

*Causes.*

The disease may be occasioned by false passages made by means of the catheter, or it may be occasioned by strictures in the urethra, which retains or greatly obstructs the discharge of urine, and inflammation and ulceration takes place behind the strictured part, which terminates in an opening or sinus externally, or in the perineum. The same circumstance also results in some cases from accidental injuries to the perineum, which terminates in ulceration, causing a fistulous opening.

*Symptoms.*

This species of fistula commences with great pain, swelling, and inflammation in the perineum, often by the urine becoming extravasated into the cellular texture in the vicinity of the urethra. Suppuration and sloughing now follow, and there is left a fistulous opening, or ulcer, through which the urine discharges. It often happens, says Bell, that in these diseases of the perineum, the urine obtaining a free discharge by the fistulous opening, the original stricture is more and more contracted, and a considerable part of the canal is totally obliterated.

The parts around and in the sinus are sometimes as tough and as hard as ligament; and the orifice is sometimes very small, and, if not cured, will remain opening during life. In the integuments of the perineum and scrotum, there are abscesses and sinuses running in various directions, and they are knotty, hard and irregular, with one or more outlets for the urine.

*Common Treatment.*

An operation by the knife. A longitudinal incision is made down through the fistula into the urethra. Others recommend that the whole diseased or fistulous flesh be cut out or extirpated.

*Reformed Practice.*

The treatment of this species of fistula is nearly the same as the fistula in ano. A leading indication is to remove the stricture, and thereby give a free passage for the urine to flow through its natural channel. This will be effected by daily introducing a bougie; at the same time applying the dressings to the ulcer as recommended under the head of fistula in ano. If there is inflammation, poultices must be applied to reduce it. After which, the callus or indurated integuments must be broken down in order to heal it; to effect which, apply the *discutient ointment*, the *black plaster*, as before mentioned, with tents rolled or charged with the stimulating powders, injections, &c.



A case occurs to me now, which I cured many years ago, for which an operation had been performed by Dr. M——, of this city. The edges of the ulcer were exceedingly hard, extending a considerable distance around it, and every time the urine was voided, a portion went naturally through the urethra, and the other portion ran a stream through the fistulous opening.

He stated that when the operation was performed by the knife, before I commenced with him, the most horrid sensations were produced by it. To use his own expressions, he said, it appeared to him that all his entrails were torn out.

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### *Fistula Lachrymalis.*

The tears secreted by the lachrymal gland, after lubricating the eye, are taken up by the puncta lachrymalia, and conveyed to the lachrymal sac, whence they pass through the ductus ad nasum into the nose. This ductus ad nasum, however, is liable, like all other canals in the body, to stricture. Whenever, in consequence of a stricture in this duct, the course of the tears into the nose is interrupted, they accumulate in the sac, which becomes tumid; and upon being pressed they regurgitate and flow partly over the cheek and partly through the nasal duct. The tumour is situated on one side of the root of the nose, below the inner canthus of the eye. The tears are constantly overflowing the eye; because, the sac being full, the puncta can receive no more. To the disease in this state, the term fistula is improperly applied. The patient experiences but little inconvenience from it, except a constant watery eye; no pain and inflammation exist. Eventually, however, the stricture becomes complete, the sac inflames and suppurates, and now a fistulous sore is formed, which discharges tears, mixed with mucus and pus. It is generally accompanied with inflammation of the eye, and often with caries of the os unguis. The puncta, in this stage, are often obstructed, and no tears find their way into the sac, but all which are secreted pass over the eyelids.

### *Common Practice.*

A variety of instruments and operations have been recommended for the removal of this troublesome complaint, but none of them seems yet to have been found effectual.

The general practice among surgeons is now to perforate the os unguis, and then to introduce a nail headed style or silver tube. When the perforation is completed, air passes out of the nose through the wound, and blood flows through it into the nostril. Ware's plan was to introduce the style or silver tube through the duct, and continue it for a great length of time. This process is much more rational, less painful, and more effectual than the other.

"Unfortunately," says Cooper, "for the scheme of making an artificial passage, nature was generally so busy, that she completely frustrated the aim of the surgeon, by gradually filling up the new aperture again. Hence, some practitioners were not content with

drilling a hole through the os unguis, but actually removed a portion of this bone; either with the forceps proposed by Lamorier in 1729, (see *Mém. de l'Acad. des Sciences*,) or with cutting instruments, among which the most celebrated is the sharp-edged kind of cannula, devised by Hunter. While this was being applied, however, it was necessary to support the os unguis with something passed up the nose, and a piece of horn was found to answer very well. Instead of these methods, Searpa prefers destroying a portion of the os unguis with the actual cautery passed through a cannula; a practice long ago banished from good surgery, and most justly condemned by Richter.

"I do not feel it necessary to enter very particularly into the details of these methods of forming an artificial passage between the lachrymal sac and nostril. I have never seen a case in which I should have deemed such practice advisable; and that the necessity for it must be rare, may be inferred from what Mr. Travers has observed, viz. that he does not believe the perforation of the os unguis ever really required.—(*Synopsis*, &c. p. 379.) Beer's remarks are also decidedly against the practice; for he states, that in order that the new opening may not be closed with lymph, it must be made too high up to serve the purpose of a drain through which the mucus can descend by its own gravity. He has not met with a single case, either in his own practice, or among the patients whom he has had opportunities of seeing under other practitioners, where the perforation of the os unguis had a successful result. On the contrary, in one healthy lad, the operation, which had been done by an experienced surgeon, was followed by the destruction of the nasal process of the upper maxillary bone, one of the ossa nasi, and all the bones contributing to the formation of the passage from the orbit into the nose.—(See *Lehre von den Augenkr.* b. 2. p. 182.) Hence, Beer thinks that the patient had better either submit to the inconvenience of being obliged to empty the distended sac by pressure several times a day, or let the cavity of the sac be obliterated by means calculated to excite the adhesive inflammation in it. But if the lachrymal puncta and ducts, as well as the nasal duct, are obliterated, Beer conceives that there is no alternative; because, if the cavity of the sac be left, the case which he terms *hydrouis saceuli lachrymalis* will ensue whenever the fistula is closed."

#### *Reformed Practice.*

I must confess that I have not been as successful in the treatment of this disease as I could have wished; and this has been owing, in part, to the peculiar nature of the complaint, and partly to the want of perseverance on the part of the patient. But I cannot, however, see why it may not be successfully treated in every instance, by a proper or judicious course.

If called to treat a person labouring under this disease in a state of inflammation, the ordinary means must be taken to reduce it. When suppuration takes place, or there is a tumour or abscess formed in the canthus of the eye, it may be suffered to burst, or it may be punctured; after which it must be kept open, and a discharge promoted by the use of tents charged with the vegetable caustic; and the opening must

be injected two or three times a day with a solution of the same article; and if this proves insufficient to break down the callous edges of the sinus, and remove the obstruction, a *very few* grains of the mineral caustic may be introduced on the tent, and in this manner it should be kept open and discharging as long as possible. The marsh-mallow ointment should be applied two or three times a day, and also the stimulating eye water.

A powder, composed of equal parts of *tobacco*, *white hellebore* and *colt's foot*, may be frequently snuffed up the nose, in order to remove the obstruction in the lachrymal duct. If a common tent is insufficient to keep the orifice open, introduce a piece of catgut, or a tent made of silver, with a small head to it. A piece of lint may be applied, with the *black salve* over it. By perseverance in this treatment, the disease may often be very successfully treated.

A European practitioner gives an ingenious method of treating this complaint, which I shall here subjoin.

### *Obstruction of the Nasal Duct.*

That a permanent closure of this canal does not so frequently attend diseases of the lachrymal organs, as writers have generally imagined, must be evident from the remarks already delivered; and also that its perviousness, when interrupted partly by inflammation and thickening of its lining, and partly by the viscid, curdy nature of the matter, may generally be restored without thrusting any probes, tubes, or other instruments, down the passage, (measures more likely, under these circumstances, to do harm than good,) is a fact which is no longer questionable. The treatment necessary in such cases must be already intelligible, from what has been said in the preceding sections, the indication being the diminution of the thickened state of the mucous membrane, by means adapted to the acute or chronic form of the inflammation, and, in many cases, the correction, also, of the morbid state of the Meibomian glands and internal membrane of the eyelids. It is only when the treatment, conducted upon these mild principles, is found ineffectual, that the surgeon should think of examining the state of the nasal duct, and learning, by the introduction of a fine probe into the passage, whether any permanent stricture or obstruction is present. It does not appear to me that it is a matter of much importance, whether the probe be made of whalebone, as Beer recommends, or of silver; but that it should not be too thick, is a thing certainly deserving greater attention. Supposing there is no direct opening through the skin into the lachrymal sac, one should be made with a lancet. However, a mere puncture will suffice, as a large incision, beginning just below the tendon of the orbicularis palpebrarum muscle, and extending, in a semilunar form, nearly an inch downwards and outwards, as used to be the old practice, can here answer no rational object, the surgeon merely having occasion for a small direct opening, through which he may conveniently pass a small probe, for the purpose of ascertaining the state of the nasal duct. "The probe (as Mr. M'Kenzie observes) is to be introduced horizontally, till it touches the nasal side of the sac; it should then be raised

into a vertical position, and its point directed downwards and a little backwards. Turning the probe upon its axis, we pass it from the sac into the duct; and, as we continue to press it gently downwards, the instrument, if the sac is pervious, enters the nose. If its point meets with some obstruction, we must not immediately conclude that there is an obliteration of the duct. We must press down the probe a little more strongly, yet without violence, turning it round between the fingers, and giving it different directions. By these means the obstacle is frequently overcome, and the probe suddenly descends. If the obstacle remains as before, and is extremely firm, still this is not sufficient ground for us to conclude that there is a real obliteration;” because, as the author proceeds to point out, the difficulty may arise from a mere thickening of the mucous membrane, and swelling and induration of its cryptæ.—(*McKenzie on the Lachrymal Organs*, p. 78.)

When the probe has entered a good way down the nasal duct, and becomes, as it were, wedged, Beer leaves the instrument in this position, until the next time of dressing, taking care, however, to fix it to the forehead, so that it may not slip out again. At the same time, he introduces into the lachrymal sac a tent, which he keeps in with a piece of sticking plaster, (*Lehre von den Augenkr.* b. 2. p. 168.) a measure which I conceive may be advantageously dispensed with. When, at length, the probe can be made to pass with some trouble into the nostril, Beer recommends introducing the instrument regularly every day, until the increased diameter of the passage allows it to be put in and withdrawn without the slightest difficulty. The period is now arrived, when Beer conceives that some measure should be taken for rendering the perviousness of the nasal duct complete and permanent, and thus entirely re-establishing the efficiency of the excreting parts of the lachrymal organs. But, says this author, whoever merely aims at restoring the natural diameter of the nasal duct by mechanical means, fulfils only one, and that not the most essential, indication. And in order that the duct may retain its natural diameter, and the tears and mucus descend freely into the nose, it is necessary that the morbid state of the mucous membrane be first removed, and the action of the excreting parts of the lachrymal organs rectified again; objects which cannot be performed by any mechanical means. Hence, Beer places considerable stress upon the necessity of obviating every unfavourable state of health likely to affect the mucous membrane of the lachrymal sac. For the purpose of restoring the natural diameter of the nasal duct, the experience of many years has convinced him that pieces of violin catgut, which are to be gradually increased in size, are the best. The end of the piece which is to be introduced is to be first softened a little between the teeth, straightened and dipped in sweet oil. Then, at least six inches of it are to be introduced, so that its lower end may be easily drawn out of the nostril; a business which Beer always lets the patient do himself. The upper portion of the catgut is coiled up, and kept within a little linen compress on the patient's forehead.



## CHAPTER XII.

### PILES—(*Hæmorrhoids.*)

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#### *Description.*

The piles appear in two states :—1st, a varicose, or preternaturally distended state of the veins, in the vicinity of the anus ; 2d, in a state of tumour, or excrescence, which apparently consists of a solid, fleshy mass.

The first is internal, the second external.

#### *Causes.*

The piles are often occasioned by aloetic purgatives. When I first commenced the practice of medicine, not knowing this fact, I took a large dose of aloes, which produced the piles, attended with great severity and obstinacy. Sedentary habits will occasion them, corpulence, or a plethoric habit, a morbid condition of the liver, pregnancy, costiveness, drastic purgatives of any kind.

#### *Symptoms.*

A patient afflicted with the bleeding piles, is subject to greater or less discharges of blood, from a rupture or distension of the veins, whilst evacuating his bowels, and sometimes a fatal hæmorrhage succeeds.

The founder of the Arian system of religion, and the philosopher Copernicus, are said to have perished in this manner. I was acquainted with a Methodist minister, who had bled, at different times, several gallons from the hæmorrhoidal vessels, by which he became exceedingly reduced and emaciated. This symptom continues a longer or shorter time, according to circumstances.

There are sometimes tumours internally, but more generally they are most numerous externally.

It usually commences with dyspeptic symptoms, nausea, &c. There appears to be a morbid, or acrid secretion from the liver, which either causes costiveness, or such a state of the bowels as brings on the complaint. The patient first experiences an uneasy sensation about the rectum, especially when he is costive, and any thing passes the bowels. He first perceives a small tumour at the end of the anus, or a little distance up, which an evacuation forces down. As the disease increases, the inconveniences attending the complaint are very great. There is extreme pain in going to stool, followed by a great tenesmus, or pressing down, with a heaviness, and itching disagreeable sensation through the hips, attended with bleeding, and sometimes by a *prolapsus ani*, or falling down of the bowel ; oftentimes a descent of a large mass of tumours ; and these, if the disease is not cured, or is protracted, remain large, hard and round, and difficult, if not impossible, to reduce. When the bowels are relaxed, or constipated, they are much worse. Sometimes inflammation supervenes, followed by suppuration, giving rise to abscess and fistula.

The following description of this disease I subjoin, from Cooper.

“*Two states.*—These are found in two states, viz. a varicose enlargement of a vein; or an excrescence arising from its adhesion and organization.

“The first is external or internal.

“*Of the external.*—The symptoms of the first are, an external swelling, which feels round and hard, which is painful at the passage of the stools: is hot and itches at other times. It sometimes bursts, and discharges blood with the stools. In a few days it declines and disappears. Sometimes it becomes inflamed, and very acutely painful; and it now and then suppurates, and lays the foundation of fistula. If cut into before suppuration, a large and very solid clot of blood passes from it.

“Repeated returns of this complaint engender an excrescence, which arises from the swelling having undergone adhesion, and becoming organized, forming a cutaneous tumour, which is very vascular. The skin over it is thin,—the substance very irritable, and pains shoot from it into the rectum, to a considerable height from the anus. I have known a person confined to her bed from the excoriation and suffering produced by such excrescences originating in external piles.

“*Internal.*—The internal piles are originally enlarged veins: they produce pain about the sacrum, bleed frequently, and render the passage of the motions difficult; and the stools are often mixed with blood.

“At length, many of these become obliterated by adhesion, and form very vascular pendulous tumours in the entrance of the rectum.

“*Occasion prolapsus ani.*—They often occasion prolapsus ani; the patient feels as if there was more motion to discharge, and he forces the rectum until a part of it becomes everted, and the internal piles appears externally, thus producing prolapsus ani. The patient, after each evacuation, is obliged to return these with the finger; the evacuation is, in consequence, highly painful, tedious, and very often the return of the part is exceedingly difficult.

“*Profuse hæmorrhage.*—The bleeding from the piles thus everted is often so profuse, that the weight of the blood exceeds that of the fæces. They sometimes vent a considerable serous discharge. When the number and size of the piles, and the degree of prolapsus becomes great, and there is much difficulty in their return, inflammation sometimes arises in them, and their return is rendered impracticable, without giving an unjustifiable degree of pain. When in this state, in addition to other sufferings, the urine is retained, the fæces pass with extreme difficulty, and there is a free sanious discharge from the part. When thus inflammation is the result of a strangulation of the piles from the pressure of the anus, it is immediately relieved by the return of the parts; but often the inflammation precedes the descent, and then the parts are too tender to be returned. It now and then happens that by this process nature effects a spontaneous cure of the disease; the parts proceed to gangrene, and a slough of the piles is produced, the rectum ceases to prolapse, and, at least for a great length of time, the patient is rid of his complaint.

“*Causes, sedentary habits.*—The usual cause of piles is a sedentary habit, which leads to congestion of blood in the vessels of the rectum.

"*Diseased liver*.—A diseased state of the liver is also a cause, by preventing a free return of blood.

"*Obesity*.—Obesity occasions them, by the pressure of the omentum and mesentery upon the mesenteric veins.

"*Pectoral disease*.—They, like fistula in ano, frequently arise from pectoral complaints, which affect respiration and the freedom of circulation."—(*Cooper's Lectures*, p. 146.)

#### Common Treatment.

Nutgalls, opium, white vitriol, extirpations with the knife, &c.

#### Reformed Practice.

In the treatment of either species of piles, whether bleeding or blind, (as they are vulgarly called,) or in a state of humour, the first object will be to obviate costiveness and to regulate the bowels by laxative medicines, and a due course of regimen; but aloes, particularly uncombined with other substances, must never be given. Medicine which acts moderately upon the bowels, is calculated to remove that morbid state of the liver and stomach, which not unfrequently gives rise to the complaint. When the fæces are so impacted or hardened that neither laxatives nor purgatives would be proper to administer, an emollient *injection*, or *clyster* may be given. The bowels having been properly evacuated and regulated, our next object will be to employ such local applications as are calculated to relieve or remove the disease; and they will depend upon the kind of piles for which they are prescribed.

1st. *Bleeding Piles*.—If bleeding is present, or if we are called to prescribe for what is termed the "bleeding piles," in which hæmorrhage is the most predominant symptom, the following ointment will be found very effectual in arresting it:

Take the *red* or *styptic powders*, pulverized, one part;  
*Venice turpentine*, two parts;  
*Lard*, eight parts;

Add the whole together, and simmer over a gentle fire till the lard is melted. Remove from it, and continue to stir until it is cold, in order well to mix, or incorporate the articles. Let a small portion of this be introduced as far up the bowels as possible, with the finger, or on a piece of lint, or in any manner that can be most conveniently done. The first application of this ointment usually stops the bleeding.

2d. *Blind Piles*, or in a state of tumour. If this variety of piles is in a state of chronic inflammation, with swelling, &c., astringent and refrigerant, or cooling washes should be applied. The following is good:

Take *acetate* or *sugar of lead*, one drachm;  
*Borax*, two drachms;  
*Soft*, or *rain water*, one pint.

Dip a piece of linen or muslin in this liquid, and wet the parts occasionally with it; after which, apply the following ointment:

Take *celandine*, the leaves, q. s.

Simmer in spirits for a short time. Then add fresh butter suffi.

cient to cover the leaves. Simmer gently over a moderate fire until the strength of the herbs is extracted, then strain, and to every four ounces of the ointment add half an ounce of *Venice turpentine*.

Anoint the piles with this, three or four times a day, and let it be introduced as far up the bowel or rectum as possible.

This wash and ointment are cooling or refrigerant, softening and discutient.

During the time that these local applications are made, administer internally the following :

Take the *flowers of sulphur* ;

*Cream of tartar*, equal parts, mix ;

Give a small teaspoonful of this daily, mixed with molasses or honey, until it acts sufficiently upon the bowels ; and take through the day an infusion, or tea, made of equal parts of *elder flowers* and *mullen* combined.

This has a very favourable effect upon the parts diseased, by its laxative, cooling and astringent effects. When the tumours become very painful, and are attended with considerable inflammation, a poultice made of the *slippery-elm bark* and *milk* will be found a valuable application. It usually soon gives relief. It may be continued with the *marsh-mallow ointment*, until the swelling and inflammation subside, or until there is suppuration, which sometimes supervenes. It is desirable always to reduce the tumours after they are forced down, and this may be done by applying a little ointment to the finger, and pressing upon the most prominent tumour until it returns.

I have used with success, in obstinate cases, the *white ointment*, which may be applied in the same manner as recommended above ; and when used, a heated substance to be applied near the parts ; as a wash, applying a weak solution of salt and water. Should not these applications have the desired effect, let the *stramonium ointment* be used.

The following preparation, in many cases, has proved very efficacious :

Take *vegetable caustic*, one drachm ;

*Acetate or sugar of lead*, one drachm ;

*Red or styptic powders*, one drachm ;

*Castile soap*, one drachm ;

*Gum aloe*, one drachm ;

Pulverize, and boil all in one pint of molasses, until it is of a proper consistence to roll out into little troches, as large as can be introduced up the rectum without pain or inconvenience. They should be made small or pointed at one end, that they may be more readily introduced. One of these may be dipt into a little sweet oil, and introduced. They must be kept from the air, otherwise they will dissolve.

These troches have a tendency to remove or destroy pile tumours, or fleshy excrescences.

There are few complaints in which *diet* has a more beneficial effect than in the piles. They are brought on by high living, and they may be removed by an opposite course, or by spare diet. *Rye bread* should be preferred ; Indian in any form, eat with molasses, stewed fruit, &c. No wines or ardent spirits can be used.



When there is a falling down of the bowel or anus, astringent applications must be made. Apply the following decoction :

Take *white-oak bark* ;

*Bark of witch-hazel* ;

*Upland sumach*, equal parts ;

Bruise ; add a suitable quantity of water, and boil till there is a strong decoction. To every pint add a teaspoonful of pulverized *alum*. Let the part be frequently washed with this decoction.

From time to time an attempt may be made to return the bowel, by gently pressing upon it with the finger which has been immersed in a little ointment. It is sometimes necessary to use a bandage to support the parts.

Some profess to have experienced great benefit in the piles by steaming them over oakum or tarred ropes ; but steaming them with bitter herbs will, probably, do better.

### *Radical Cure for the Piles.*

The above treatment will not only relieve, but often cure the piles ; but sometimes, when they have been neglected or improperly treated, they become so seated and enlarged, that it is necessary to remove the tumours. Should this happen, or should not the above means be sufficient to remove the complaint, a piece of silk or thread may be passed around the largest tumour, (after having been drawn down,) and tied as tight as the patient can bear, and the knots may be occasionally drawn a little closer. This will stop the circulation in the tumour or tumours, and in about a week they will be separated, and a radical cure effected.

If the ligature creates much inflammation, apply a poultice.

When the tumours are seated so high up that they cannot be tied conveniently, they must be drawn down with a pair of forceps, or the patient may propel the tumour or tumours, as much as possible, by straining, as if at stool.

One or more may be tied at a time, according to the size. Care must be taken to draw the knot so tight as to intercept, completely, all circulation, so that the part may mortify and drop off.

In general, it will be sufficient to remove the largest, as the others will shrivel or shrink up, and give little or no further trouble.

I have removed a number of very large tumours at a time with the ligature, and effected a perfect cure ; and only once have I extirpated a pile tumour with the knife, and then at the particular request of the patient.

The ligature, for several reasons, is the most proper. Besides avoiding all danger, great benefit is derived from the discharge which it produces. It is very seldom, however, necessary.

Sir Astley Cooper has the following remarks upon this subject :

All the means which can be employed will not always prevent their increase ; nor when they are once suffered to acquire considerable magnitude, and to produce prolapsus ani, can they be subdued by any medical or local treatment short of operation.

*Mode of Examination.*—To examine a patient properly under these

circumstances, and to enable you to form a correct judgment of the necessity for, and the mode of, operating, it is necessary that the patient should have an evacuation; and that, before the return of the prolapsus, the surgeon should examine the part.

He will then observe a portion of the rectum, forming the outer circle, and a number of round and dark-coloured projections, occupying the more central parts of the protruded mass. The operation is then ascertained to be necessary or not, according to the degree of prolapsus and the number and size of the piles.

Having determined that an operation is required, it is next to be considered in what manner it is to be performed.

*Two modes of operation.*—It may be done by excision, or by ligature, or it may be effected by a combination of the two.

*Excision.*—For excision, in the early part of my surgical career, I was a strong advocate; for I found it a less painful operation than ligature, and it appeared to me not dangerous; but as my experience increased, I was induced to change my opinion, and to consider excision as not divested of danger.

The three following cases are proofs of this: the first, dying of inflammation, and the second and third from hæmorrhage. I have also seen, in a fourth case, extensive suppuration produced by excision.

*Case.*—Mrs. O——, the wife of a respectable medical man, came to London to have some hæmorrhoids removed; and I advised their excision. Observing, in cutting, that her constitution was of a feeble and irritable kind, I removed only one of three which appeared. In three days after the operation by scissors, I found her complaining of great pain in her abdomen, from intestinal and peritoneal inflammation: she frequently vomited, and her abdomen became tense. The symptoms were not relieved, although motions were procured, and she died in a week from the operation. The internal surface of the intestine, and the peritoneum, were inflamed extensively.

*Case.*—Mr. Esdaile came to London from Guernsey or Jersey, in order to have a hæmorrhoid removed. Mr. Leman and I attended him, and I removed a single pile by scissors. On the following day he was exceedingly low, his pulse small, so as to be scarcely perceptible. On the next day he voided a great quantity of blood from his intestines; and on the day after he died, falling a victim to internal bleeding, from the return of the divided vessel with the prolapsed intestine.

*Case.*—The Earl of S—— applied to me for piles with prolapsus ani, and I removed some of the largest with scissors; the prolapsus was greatly relieved; and for more than twelve months after he was little troubled, either with hæmorrhoids or prolapsus. About two years afterwards he again applied to me, for a return of his complaint; and, seeing his age, and having examined the piles, I thought before I operated, I would have a consultation, when the operation of excision was again recommended. I removed with the scissors one of the largest, and desired his lordship to keep the recumbent posture. He laid down upon the bed immediately after the pile was removed. In about ten minutes he arose from his bed, and discharged blood. In

twenty minutes he had the same sensation, and evacuated more blood than before. In about the same lapse of time, he again arose, and soon became very faint from the free hæmorrhage. I therefore opened the rectum with a speculum, and saw an artery throwing out its blood with freedom. I therefore requested him to force down the intestine as much as he could, and, raising the orifice of the bleeding vessel with a tenaculum, secured it in a ligature, and also compressed the artery with a piece of sponge. His lordship bled no more. On the following day he was low, his pulse very quick, and he had a shivering: on the next he complained of pain in his abdomen; he had sickness, and tenderness upon pressure, and in four days he died.

In the presence of Mr. Wardrop I opened his body, and found inflammation of the rectum, and disease of the intestine, they being enlarged and hardened, so that the intestine internally had a curious spotted appearance. He was not, therefore, a healthy or sound man in other respects; and it is in such cases that unexpected symptoms arise after operation.

*Ligature.*—As a ligature prevents the danger of bleeding, it is best to use it, although the process is more tedious and painful. The pain which it produces may be mitigated by not drawing the ligature too tight. Draw down the pile with forceps, or a tenaculum, and tie a piece of waxed silk around it; draw the knot until the patient complains severely, then tie a second, cut off the ligature a little way from the knot, and return the intestine and pile.—(*Cooper's Lectures*, p. 148.)

*Double ligature.*—But in cases in which the pile is very large, a safer and less painful plan may be adopted; namely, to pass a needle and ligature through them, and to cut them off beyond it.

## CHAPTER XIII.

### STRICTURES OF THE RECTUM.

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#### *Description.*

It is sometimes the case that the rectum, from various causes, becomes partially or nearly closed by the formation of tumours or scirrhus, which almost renders it impossible for the fæces to be voided, except they are in a very liquid state. It is complicated not unfrequently with ulcer, from which there is a discharge of pus or matter.

Sometimes the disease extends over a considerable length of the gut, but is generally more circumscribed. The coats of the bowel become much thicker and harder than natural. The muscular is subdivided by membranous septa, and the internal coat is sometimes formed into hard, irregular folds. The surface of the inner membrane is occasionally ulcerated, so as to form a cancerous disease. Every vestige of the natural structure is sometimes lost, and the gut is changed into a gristly substance. The cavity of the bowel is always rendered narrow at the scirrhus part, and is sometimes almost obliterated. When the passage through the gut is very much obstructed, the bowel is always a good deal enlarged just above the stoppage or stricture, from the accumulation of the fæces there. As the disease advances, adhesions form between the rectum and adjacent parts, and ulcerations produce communications between them.

#### *Causes.*

It may proceed from costiveness or hardened fæces, piles, drastic purgatives, and other sources of irritation.

#### *Symptoms.*

As the disease at first is not very painful, it is usually not much noticed till somewhat advanced. There is perhaps no disease, as Mr. Calvert has noticed, in which the symptoms, arising from derangement of other parts, are so predominant over the local; and "there can be no doubt that in many cases of iliac passion and obstinate constipation, arising from this source, death takes place without the slightest suspicion of the cause. In other cases, especially when the disease is of a malignant nature, it is not unfrequently confounded with scirrhus of the uterus."—(p. 123.) He also adverts to a case, in which a stricture of the rectum was lately mistaken for an intussusception, by some practitioners "at the pinnacle of professional eminence." Mr. C. Bell, in one case where he attempted to puncture the bladder, and in another where he was about to divide a fistula in ano, felt his fingers stopped by strictures of the rectum, of which the patients had no suspicion. The patient is at first habitually costive,



or affected with what is called a torpid state of the bowels, and usually voids his stools with a little difficulty. In time, a good deal of pain is felt in the part affected, especially at stool, after which some relief is experienced. "As the gut continues to decrease in diameter, (says Mr. Copeland,) the efforts to expel the fæces become more violent, and the consequent progress of the disease more rapid. The stools, which have been long evacuated with difficulty, become contracted in size, appearing like earth-worms in their form, or small pellets;" and, if the finger be introduced into the rectum, "the gut will be found either obstructed with small tubercles, or intersected with membranous filaments: or else the introduction of the finger will be opposed by a hard ring of a cartilaginous feel, composed of the diseased inner membrane of the intestines." These states, as Mr. Copeland observes, are very different from the regular tumour on the anterior part of the rectum, occasioned by an enlargement of the prostate gland; a case apt to be suspected. "As the disease advances, (says the same author,) the fæces become more fluid, and there is a thin sanious discharge from the anus, accompanied with tenesmus." Mr. Calvert notices, as the most characteristic symptoms, an unusual distention of the colon; the extension of pain, felt about the upper part of the sacrum down to the feet, in the course of the large nervous trunks; the decrease of the tenesmus after a sufficient evacuation; and the scanty motions of irregular or figured appearances. The latter effect, however, he says, is not always present throughout the disease, for if the contraction be at the upper part of the rectum, the motion may be of the usual size and appearance.—(p. 147.) According to Desault, pus and blood may sometimes be noticed with the excrement, particularly when the disease has advanced to the ulcerated state. The cancerous stricture is always attended with more or less of a burning sensation, or acute shooting pains at the seat of the disease, except at its very beginning. Sometimes, when a great part of the stricture has been destroyed by ulceration, the motions are voided without much effort, but not without intense suffering.—(*Calvert*, p. 148—150.) The patient at length becomes sallow; frequent eructations of air from the bowels torment the patient, and render his life miserable; the constitution suffers, and dissolution follows. Severe tenesmus attends the whole course of the disease.—(*Œuvres Chir. par Bichat*, t. ii.)

Sometimes a small fistulous orifice, at the verge of the anus, communicates with the inferior portion of the diseased part. Such a fistula, in a case recorded by Sir Everard Home, was half an inch in length.—(*Obs. on Cancer*, p. 133.)

Desault often saw the disease form a communication between the rectum and vagina, and the fæces passed through the latter part. In the latter stage of the affliction, the rectum, bladder, vagina, uterus and adjacent parts, are all involved in one common ulceration. And, according to Mr. Calvert, the surface of the os sacrum, or even that of the lumbar vertebræ, may become involved in the extent of the disease, the rectum being sometimes so firmly connected with the former bone as to be very difficultly separable from it even with a knife.—(p. 137.)

*Treatment.*

We may first commence the treatment of stricture of the rectum, by ordering such medicine and such a course of regimen or diet as are calculated to keep the bowels in a soluble state. In the commencement, a portion of our common purgative may be given; afterwards, a laxative pill, sufficient to obviate costiveness, or to act moderately upon the bowels.

One or two of the troches, mentioned under the head of piles, may be introduced up the rectum daily, to be accompanied with the use of the discutient ointment.

If there be any discharge of matter attending the stricture, make use of the *vegetable caustic*; a small quantity to be applied, enveloped in lint, and put on the diseased parts with a bodkin or tent. A little of the solution of this alkaline preparation may be daily injected; the strength of it to be gradually increased as the patient can bear it. Where the ulcer is in sight, or so situated that application can be made directly to it, a saturated solution of the vegetable caustic may be applied, on a little cotton or lint; and, what I consider still better, is *LEV*, made as strong as possible. The first running from that prepared from hickory ashes, contains the greatest degree of strength, or is the most concentrated. It should be put into a vial, and kept from the air by means of a glass stopper, and when applied, the cotton to be dipped or immersed in it.

This preparation, as before stated, in treating of fistula, has an action *sui generis*, or peculiar to itself. It produces a smarting or painful sensation for a few moments, and then subsides, without leaving the parts sore or inflamed, like the generality of caustics. Not only so: it has an effect peculiarly favourable in all indolent and fistulous ulcers, acting only upon spongy, fungous or diseased flesh, and thus bringing about healthy granulations. It becomes necessary sometimes to dilate the stricture, which may be done in the following manner.

Take equal parts of the bayberry and common tallow; then make candles of different sizes in the ordinary manner. They should be about six inches long, and a little smaller at one end than the other. Immerse in sweet oil the end of one of the smallest of these, which should be of such a size as can be introduced without much pain, and let it be introduced up the rectum, and continued half an hour each time, or as long as the patient can bear. The same should be repeated for three or four days, and then one larger used the same length of time; and thus the size should be increased as the stricture becomes dilated.

The patient himself can generally introduce them without any difficulty.

This will be found a very excellent method of treating strictures of the rectum.

## CHAPTER XIV.

### PROLAPSUS ANI, OR FALLING DOWN OF THE BOWEL.

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IN this disease the rectum protrudes in a greater or less degree at the anus, either from mere relaxation of the internal membrane of the bowel, or from a real displacement and inversion of its upper portion, which presents itself as an external tumour. The first form of the disease is that which is most common. The inner coat of the rectum being connected to the muscular by a very loose elastic cellular substance, naturally forms several folds, the use of which is to let this bowel dilate sufficiently for the retention of the excrement. The swelling occasioned by the protrusion of the inner coat of the rectum, or by the actual displacement of the greater part of this bowel, is subject to considerable variety in respect to length and thickness; when small, resembling a mere ring; when large, and reaching far downwards, having an oblong globular form. The tumour sometimes admits of reduction with ease; sometimes it cannot be returned without difficulty. The disease occurs in persons of all ages; but it is most common in infants and elderly subjects. Such examples as are combined with thickening and relaxation of the inner coat of the rectum, internal hæmorrhoids, or other tumours, are sometimes attended with a copious discharge from the anus, and from the prolapsed bowel, of a serous and mucous fluid, mixed with blood.

#### *Causes.*

The disease may originate from various causes:

1. From circumstances tending to relax and weaken the parts which retain the rectum or its inner membrane in its situation.
2. From various kinds of irritation and pressure on the bowel itself, having the effect of increasing the powers by which it is liable to be forced outwards.
3. From any disease or irritation in the adjacent parts, and affecting the rectum sympathetically.

Hence, a prolapsus ani may be caused by long habitual crying, and great exertions of the voice; violent coughing; sitting long at stool; hard dry fæces, and much straining to void them; obstinate diarrhœa in infants, kept up by dentition; dysentery; chronic tenesmus; various diseases of the rectum itself; the abuse of aloetic medicines and emollient clysters; hæmorrhoids; excrescences and thickenings of the inner membrane of the rectum; difficulty of making water; the efforts of parturition; the stone in the bladder; paralysis of the sphincter and levatores ani; and prolapsus vaginæ.

Considering the degree of the disease, and the occasional closeness of the stricture, the symptoms are sometimes mild, the rectum

generally bearing pressure, exposure to the air; and other kinds of irritation, better than any other bowel. But the urgency and danger of a prolapsus ani are greater when the swelling is large, recent and conjoined with violent pain, inflammation and febrile symptoms. When complicated with strangulation, the consequences may be a stoppage of the fæces, severe pain, swelling inflammation, and even gangrene within the cavity of the abdomen. In short, all the evils may arise which attend strangulated hernia. The prognosis, therefore, varies according to the different degree, species, cause and complication of the disease. The recent, small, movable prolapsus ani, the cause of which admits of being at once removed, may be effectually and radically cured. It should always be recollected, however, that when once the rectum has been affected with prolapsus, a tendency to protrusion from any slight occasional cause generally remains. The habitual prolapsus, which has existed for years, and comes on whenever the patient goes to stool, is the case which is most difficult of relief.

### *Treatment.*

The treatment of prolapsus ani embraces three principal indications :

1. The speedy reduction of the prolapsed part.
2. The retention of the reduced bowel.
3. The removal and avoidance of the causes by which the disease is induced.

In general, when the case is recent, and the tumour not of immoderate size, the reduction may be accomplished with tolerable ease, by putting the patient in a suitable posture, with the buttocks raised and the thorax depressed, and by making gentle and skilful pressure either with the palm of the hand or fingers ; but from the inflammation and swelling, this cannot always be done, and it will not do to press too hard, or exert too much force, for fear of irritation. No further attempts must be made at reduction, until means have been made use of to reduce the inflammation. Astringent washes may first be tried, if the pain and swelling be not too great.

Take *White-oak bark,*

*Sumach,*

*Witch-hazel,*

*Hemlock bark ;*

Bruise, and make a strong decoction of these barks, and to every pint add a teaspoonful of pulverized *borax*. Let the parts be frequently washed with it ; soon after, apply the *white ointment*, as directed under the head of " piles."

After these have been applied, should it still continue irreducible, apply the *slippery-elm bark* poultice, to be secured by the T bandage, as recommended under the head of " fistula." This will soon lessen the inflammation, so that the intestine can be reduced.

If it proceed from a relaxed state of the bowels, medicines must be given for that complaint. The diet should be such as to keep the



bowels in a soluble state, as rye or brown bread, "mush or hasty pudding and molasses."

After the protruded intestine has been replaced, let the *white ointment* be continued for some time, until the tone of the parts is restored.

I have attended some deplorable cases of this complaint, particularly in infants, where the anus had been protruded for many weeks, and which had extended several inches, with great swelling, inflammation and ulceration, and yet recovery followed, by pursuing these means. In one case, it was necessary to poultice a month before the swelling was sufficiently reduced to return the intestine.

## CHAPTER XV.

### WHITE SWELLING—(*Hydarthus*.)

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THE white swelling is a peculiarly common and exceedingly terrible disease. The varieties of white swelling are numerous, and might usefully receive particular appellations. Systematic writers have generally been content with a distinction into two kinds, viz., *rheumatic* and *scrofulous*. The last species of the disease they also distinguish into such tumours as primarily affect the bones, and then the ligaments and soft parts, and into other cases, in which the ligaments and soft parts become diseased before there is any morbid affection of the bones. The propriety of using the term *rheumatic* is very questionable.

The knee, ankle, wrist and elbow, are the joints most subject to white swellings. As the name of the disease implies, the skin is not at all altered in colour. In some instances, the swelling yields, in a certain degree, to pressure; but it never pits, and is almost always sufficiently firm to make an uninformed examiner believe that the bones contribute to the tumour. The pain is sometimes vehement from the very first; in other instances, there is hardly the least pain in the beginning of the disease. In the majority of scrofulous white-swellings, let the pain be trivial or violent, it is particularly situated in one part of the joint, viz., either *the centre of the articulation*, or *the head of the tibia*, supposing the knee affected. Sometimes the pain continues without interruption; sometimes there are intermissions; and in other instances the pain recurs at regular times, so as to have been called, by some writers, periodical. Almost all authors describe the patient as suffering more uneasiness in the diseased part when he is warm, and particularly when he is in this condition in bed.

At the commencement of the disease, in the majority of instances, the swelling is very inconsiderable, or there is even no visible enlargement whatever. In the little depressions, naturally situated on each side of the patella, a fulness first shows itself, and gradually spreads all over the affected joint.

The patient, unable to bear the weight of his body on the disordered joint, in consequence of the great increase of pain thus created, gets into the habit of only touching the ground with his toes; and the knee, being generally kept a little bent in this manner, soon loses the capacity of becoming extended again. When white swellings have lasted a while, the knee is almost always found in a permanent state of flexion. In scrofulous cases of this kind, pain constantly precedes any appearance of swelling; but the interval between the two symptoms differs very much in different subjects.

The morbid joint, in the course of time, acquires a vast magnitude. Still the integuments retain their natural colour, and remain unaffected.

ed. The enlargement of the articulation, however, always seems greater than it really is, in consequence of the emaciation of the limb, both above and below the disease.

An appearance of blue, distended veins, and a shining smoothness, are the only alterations to be noticed in the skin covering the enlarged joint. The shining smoothness seems attributable to the distention, which obliterates the natural furrows and wrinkles of the skin. When the joint is thus swollen, the integuments cannot be pinched up into a fold, as they could in the state of health, and even in the beginning of the disease.

As the disease of the articulation advances, collections of matter form about the part, and at length burst. The ulcerated openings sometimes heal up; but such abscesses are generally followed by other collections, which pursue the same course. In some cases, these abscesses form a few months after the first affection of the joint; on other occasions, several years elapse, and no suppuration of this kind makes its appearance.

Such terrible local mischief must necessarily produce constitutional disturbance. The patient's health becomes gradually impaired; he loses both his appetite and natural rest and sleep; his pulse is small and frequent, and obstinate, debilitating diarrhœa and profuse nocturnal sweats ensue. Such complaints are sooner or later followed by dissolution, unless the constitution be relieved in time, by the amendment of the diseased part. In different patients, however, the course of the disease, and its effects upon the system, vary very much in relation to the rapidity with which they occur.

*Rheumatic white swellings* are generally considered distinct diseases from the *scrofulous distemper* of large joints. In the first, the pain is said never to occur without being attended with swelling. *Serofulous white-swellings*, on the other hand, are always preceded by a pain, which is particularly confined to one point of the articulation. In rheumatic cases, the pain is more general, and diffused over the whole joint.

With respect to the particular causes of all such white swellings as come within the class of rheumatic ones, cold is the exciting cause. External irritation, either by exposure to damp or cold, or by the application of violence, is often concerned in bringing on the disease; but very frequently no cause of this kind can be assigned for the complaint. As for *scrofulous white swellings*, there can be no doubt that they are under the influence of a particular kind of constitution, termed a *scrofulous*, or *strumous* habit. In this sort of temperament, every cause capable of exciting inflammation, or any morbid and irritable state of a large joint, may bring such disorder as may end in the severe disease of which we are now speaking.

In a man of a sound constitution, an irritation of the kind alluded to might only induce common, healthy inflammation of the affected joint.

In *scrofulous habits*, it also seems probable that the irritation of a joint is much more easily produced than in other constitutions; and no one can doubt that, when once excited in *scrofulous habits*,

it is much more dangerous and difficult of removal than in other patients.

The pathology or nature of this complaint is thus given by an experienced practitioner :

“There are not, probably,” says he, “many disorders, to which the human body is liable, which prove either of worse consequences to patients, or that are less understood by practitioners, than white swellings of the joints; insomuch, that whenever the disease is thoroughly formed, it is in general considered as incurable.

“This ought certainly to be a very strong inducement with every practitioner, for carrying his researches with respect to it as far as possible.

“The term *white swelling* has commonly been applied to such enlargements of the joints as are not attended with external inflammation or discolouration of the skin and common teguments; the only symptoms, which at first commonly take place, being a greater or less degree of swelling, with a deep-seated pain. In the progress of the disease, indeed, the whole surrounding parts come to be so much affected, that inflammation is at last communicated to the skin itself; and, when this terminates in abscesses and consequent ulcerations, it is not at all uncommon to find a great many openings surrounding the whole joints that are so diseased.

“Though there are, by different writers, several detached observations upon this complaint, yet no regular account has ever been given of it, farther than what may be met with in general dissertations on diseases of the bones, which have always been considered as the principal seat of such disorders.”

#### *Different Species of White Swellings.*

There seem evidently to be two different species of white swellings, distinct from one another; and, as the one is of a much milder nature than the other, it would seem to be a matter of importance, so to characterize the different varieties, that the one may be easily and certainly distinguished from the other.

In this, however, as in many other diseases, the complaint has frequently been of considerable standing before practitioners are called in: so that although, if seen from the beginning, and through all its different stages, it might generally be easily enough known of what particular nature the disorder in reality is; yet, when it is far advanced, and when an exact history of the symptoms cannot be obtained from patients themselves, it is often impossible to make any accurate or certain distinction; the symptoms of both species being, in the latter stages of the disease, commonly very similar.

When this, however, is not the case, and a practitioner is called in before the symptoms have made any great progress, he may commonly, with a little attention, form almost a certain judgment of the nature of the complaint. And, as I have had many opportunities of seeing every species of the disorder, in all its stages, I propose, first, to give as exact an account as possible of the rise and progress of the



different symptoms in each species ; then to mention the several appearances of the joints, which in each of them are observed on dissection, with the most common exciting and predisposing causes of the disorder ; and, lastly, I shall enumerate the different remedies that I have used for it, with their several effects.

Swellings of this nature, it may be remarked, occur in every joint of the body ; but much more frequently in the large than in the smaller joints : thus, at least, twice as many are met with in the hip, knee and ankle joints, as in all the rest of the body besides.

### *Rheumatic Species of White Swelling.*

#### *Symptoms.*

The first, and what may be considered as the most simple, species of the disease, begins with an acute pain, which seems to be diffused over the whole joint, and frequently even extends along such muscles as are connected with it. There is, from the beginning, a uniform swelling of the whole surrounding teguments, which in different patients is in very different degrees ; but it is always so considerable as to occasion an evident difference in point of size between the diseased and sound joint of the opposite side. A considerable tension generally prevails ; but there is seldom, in this period of the disorder, any external discolouration.

The patient, from the commencement of the disease, suffers much pain from the motion of the joint ; and always finding it easiest in a relaxed posture, keeps it accordingly constantly bent ; which generally, in every situation, but more especially in the knee, produces a stiffness or kind of rigidity in all the flexor tendons of the limb.

This rigidity of the tendons has by many been considered as an original symptom of the disorder ; but when duly attended to, it will always be found to be rather a consequence of the disease, and to have arisen from the above-mentioned cause. In consequence, too, of the total want of motion, which from this circumstance is always produced, such joints in a very short time generally become quite stiff and immovable, and seem frequently to be in a state of complete and real ankyloses, or stiff.

If the disorder, either by nature or by the effects of proper remedies, is not now carried off, the swelling, which originally was not perhaps very considerable, begins gradually to augment, and goes on till it sometimes increases to twice, or even thrice the natural size of the part.

The cuticular veins become turgid and varicose ; the limb below the swelling decays considerably in its fleshy muscular substance, at the same time that it frequently acquires an equality in point of thickness, by becoming œdematous ; the pain turns more intolerable, especially when the patient is warm in bed, or otherwise heated ; and abscesses form in different parts of the swelling, and run in all different directions, whilst at the same time they frequently do not appear to communicate with one another.

In all these abscesses, a fluctuation of a fluid, upon pressure, is generally evident, as is the case in every collection of matter not very

deep seated ; but, independently of the fluctuation, all such swellings afford a very peculiar elastic feel ; yielding to pressure, at the same time that they do not, like œdematous swellings, retain the mark, but instantly rise again as soon as the pressure is removed.

These different collections, either upon breaking of themselves, or on being laid open, discharge considerable quantities of matter, which at first is generally purulent, and of a pretty good consistence : it soon, however, degenerates into a thin fœtid ill-digested sanies ; and has never, at least in proportion to the quantity discharged, any remarkable influence in reducing the size of the swellings, which still retain nearly their former dimensions.

If the orifices from which such matters flow are not by art kept open, they very soon heal up ; and new collections, forming in different parts, again break out and heal as before. So that, in long continued disorders of this kind, the whole surrounding teguments are often entirely covered with scars that remain after such ulcers.

Long before the disorder has arrived at this state, the patient's health has generally suffered considerably ; first, from the violence of the pain, which is often so great as to take away entirely both sleep and appetite ; and then, from the absorption of matter into the system, which always takes place in some degree from its first formation in the different abscesses ; but which, indeed, never appears so evidently, till the several collections either burst of themselves or are by incision laid open ; when a quick pulse, night sweats, and a weakening diarrhœa, always certainly occur ; and generally, at last, carry off the patient, if a cure of the disorder be not otherwise effected.

These are the several symptoms of this species of white swelling, in all its different stages.

### *Distinction.*

The only preternatural affection observed on laying open the swellings, is, a considerable morbid thickness of the surrounding ligaments, without any disease of the joint whatever ; the bones and cartilages always remaining perfectly sound, and the synovial fluid in a natural condition both as to quantity and consistence.

This thickening of the ligaments, though in general it appears in a greater or less degree, according as the complaint has been of longer or shorter duration, yet we do not find that it always does so ; for in some recent instances, the ligaments have appeared more diseased than in others, where the disorder had continued longer. In the former, indeed, the symptoms were always found to have been very violent.

In the more advanced stages of the disorder, when abscesses have formed in different parts ; when the pain has been long very violent, with great addition of swelling ; on laying open the parts, the thickening of the ligaments is then found to be more considerable, and is generally, if not always, attended with an effusion, into the surrounding cellular substance, of a thick glairy matter, which appears to be the cause of that elastic feel peculiar to such swellings, formerly taken notice of in the description.

The different abscesses or collections of matter are found to run in

various directions through this glairy albuminous congestion, without, however, seeming to mix with it. In some few instances, again, together with collections of pus, a great many small hydatids are observed; and in the farther progress of the disorder, all these together form such a confused mass of different matters and substances, that it is almost impossible, by dissection, to procure a more distinct view of them, than what presents itself on their first being laid open.

Even all these appearances exist, without any affection of the bones of the joint; which, together with the surrounding cartilages, upon cutting through the capsular ligaments, remain perfectly sound.

When, however, by a very long continuance of the complaint, these ligaments come to be corroded by the different collections of matter, the cartilages, and, in consequence, the bones, are very soon brought to suffer; the latter becoming carious, as soon as the former, by the acrimony of the matter, have been abraded.

The tendons of the flexor muscles, which are always, in this disease, as was already mentioned, very stiff and much contracted, do not, upon dissection, exhibit any evidently morbid appearances, either with respect to hardness or enlargement.

#### *Of the Symptoms of the more Inveterate or Scrofulous Species of White Swelling.*

In this species of the disease, the pain is generally more acute than in the other; and, instead of being diffused, it is more confined to a particular spot, most frequently to the very middle of the joint. In some instances, the patients say, they could cover the whole pained part with a small piece.

The swelling is at first commonly very inconsiderable; insomuch that, on some occasions, even when the pain has been very violent, little difference, in point of size, could be observed between the diseased joint and the opposite sound one.

In this, as in the other species of the disease, the least degree of motion always gives very great pain: so that the joint being here too constantly kept in a bent position, stiffness and rigidity of the tendons come likewise soon to be produced.

As the disorder advances, the pain turns more violent, and the swelling becomes more considerable, with an evident enlargement of the ends of such bones as compose the joints.

In process of time, the tumour acquires that elastic feel formerly taken notice of, varicose veins appear over its surface, and collections of matter occur in different parts of it. These, upon bursting or being laid open, discharge considerable quantities sometimes of a purulent like matter, but most frequently of a thin fœtid sanies; and if a probe be introduced, and can be passed to the bottom of the sores, the bones are found carious, and pieces of them are often discharged at the openings.

On the farther continuance of the disorder, the constitution comes here likewise to suffer as in the first species of the disease; and a diarrhœa, with night sweats, commencing, the patient, though naturally

perhaps of the fullest habit, is reduced by loss of flesh to the most extreme weakness.

*Appearances observed on Dissection, in the Scrofulous Species of White Swelling.*

When such joints are dissected, either after death, or after amputation of the member in the first stages of the disorder, the soft parts seem to be very little affected : but in all, even the slightest, there was constantly observed an enlargement, either of the whole ends of the bones, or of their epiphyses ; frequently of those on one side of the joint only ; in others, again, the bones on both sides have been affected.

This enlargement sometimes occurs without any other evident disease ; but in general, and always in a more advanced state of the complaint, the soft spongy parts of such bones are found to be dissolved into a thin, fluid, foetid matter ; and that too, in some cases, without the cartilages which surround them seeming to be affected. In process of time, however, the cartilages come likewise to be dissolved ; and then the different matters, namely, the dissolved bones and softer parts, mixed all together, exhibit, when such swellings are laid open, a still more confused collection than is generally observed, even in the worse stages of the other species of the disorder.

Although it was remarked, that in the early periods of the complaint, the surrounding soft parts do not always appear to be much affected ; yet, in its farther progress, they likewise are generally brought to suffer. The ligaments become thickened, and the contiguous cellular membrane filled with that viscid glairy kind of matter we mentioned when speaking of the other species of the disorder.

*Causes.*

Having thus given a particular account of the different appearances generally observed in both species of white swelling, we come now, in course, to the consideration of the different causes which tend to produce them ; and, to go on in the same order with the descriptions that have been given, we shall first enumerate those that are particularly connected with that which we termed the first, or rheumatic species of the disorder.

All such strains may be mentioned as causes, as particularly affect the ligaments of the joints, so as to produce inflammation ; likewise bruises, luxations of the bones, and, in short, every derangement which can in any degree be attended with that effect.

A rheumatic disposition may here, too, be taken notice of, as a principal cause of this species of white swelling ; for, in every rheumatic affection, the parts most liable to be attacked are the ligaments of the joints, and other deep-seated membranes. The disorders occurring most frequently in the large joints, especially in the knee, is a strong argument, too, for supposing that the rheumatic disposition has a considerable influence in its production ; for it is well known that rheumatism, in its most evident form, does really more frequently attack the larger joints, than any of the smaller : and, in fact, we find this



species of white swelling occurs more frequently in young, plethoric people, in whom the rheumatic diathesis or predisposition most frequently prevails, than it ever does in those of an opposite temperament.

That it is the ligaments of the joints only which are first affected in this disorder, is, from the history of the dissections, rendered evident; these, in the first stages of the complaint, being almost the only parts that are found diseased. The effusions into the cellular membrane, of that thick, glairy matter we have taken notice of, are probably occasioned by an exudation from the vessels of those ligaments that have been originally inflamed, as it is known that such parts never furnish a proper fluid for the formation of purulent matter. In the course of the disease, indeed, abscesses containing real pus do always appear, but never till inflammation has been communicated to the surrounding parts, which more readily afford a fluid proper for this purpose.

I would, therefore, upon the whole, conclude, that this species of white swelling is at first always occasioned by an inflammatory, or rheumatic affection of the ligaments of such joints as it attacks, from whatever cause such inflammation may originally have proceeded.

The other species of the disorder, from all the symptoms enumerated, and from the different appearances on dissection, seems to be an affection of the bones; the surrounding soft parts coming only to suffer in the progress of the disease, from their connexion with and vicinity to these.

This species of white swelling very seldom occurs as the consequence of any external accident. It generally begins without the patient's being in the least able to account for it. From the effects usually produced on the bones which it attacks, it would appear to be a species of the real spina ventosa, and which, again, is very probably a disease of the same nature in the bones, that scrofula is of the soft parts. Indeed, the appearances of the two disorders, after making allowances for their different situations, are exceedingly similar; they both begin with considerable enlargements or swellings of the parts they invade, which afterwards, in both too, generally end in evident ulcerations; and they both likewise frequently occur in the same person, and at the same time.

It is likewise observed, that this species of white swelling is generally either attended with other evident symptoms of scrofula subsisting at the time, or that the patient, in an earlier period of life, has been subject to that disease; or, what is nearly the same, that he is descended from scrofulous parents, and, consequently, most probably has the seeds of that disease lurking in his constitution.

From all these circumstances, it may, I think, with probability, be concluded, that this species of white swelling is commonly, if not always, of a scrofulous nature: and as it has already been shown, that the other species of the disorder is to be considered as an inflammatory, or what we have termed a *rheumatic*, affection; and, a thorough distinction of the two different species being, in the treatment, a matter of some importance, it will not here be improper to give a short enumeration of the several diagnostic, or most characteristic symptoms of each.

*Discrimination.*

The pain in the white swelling from a rheumatic disposition is always, as was formerly remarked, from the beginning, diffused over the whole joint, and on some occasions extends even a considerable way along the muscles that are attached to it: whereas, in the other species of the disorder, the pain is not only always at first, but sometimes, even when the complaint has been of considerable standing, confined to a very small, circumscribed space.

In the former, the swelling is always confined to the soft parts, and is, from the beginning, exceedingly evident: but in the latter there is seldom, for some time, any perceptible swelling; and, when it does more sensibly appear, the bones are found to be the parts chiefly affected—the surrounding teguments coming only to suffer on the further progress of the disease.

These are the chief local differences of the two species of this disorder; but some assistance in the distinction may likewise be obtained from considering the general habit of the patient, and the manner in which the complaint may seem to have been produced.

Thus, when such swellings occur in young, strong, plethoric people, and especially in those who have formerly been subject to rheumatism, whether they have been the immediate consequences of external accidents or not, they will most probably always prove to be of the mildest, or rheumatic species of the disorder.

Whereas, when swellings of this nature appear in such patients as are otherwise evidently of scrofulous dispositions—where, together with a fine skin and delicate complexion, there are either, on examination, found to be hardened glands in the neck, armpits, or inguina, or it is discovered that the patient may be liable to such complaints from inheritance—when either any or all of these circumstances occur, and if the disorder has begun in the manner formerly described, without any evident external cause, we need be under very little doubt in concluding it to be of a scrofulous nature.—(*Bell on Ulcers*, p. 274.)

*Treatment of White Swelling.**Common Treatment.*

Blisters, setons, issues, mercury, amputation, &c. That the reader may have an opportunity of knowing the efficacy of the present practice, I here subjoin the report of B. C. Brodie.

*From a work called "Morisonia," page 310.*

*Of Tumours, White Swellings, and Diseases of the Joints.*

"I have now before me the work of B. C. Brodie, F. R. S., Professor of Anatomy and Surgery to the Royal College of Surgeons, and Surgeon to St. George's Hospital, on Diseases of the Joints; and from the cases stated, a more unsuccessful practitioner never presented himself before the public. One would think this learned and dexterous surgeon considered it only the patient's wish to have his limbs

torn off, or to die a wretched, lingering death. What have his researches benefited the world, by his cutting up, dissecting joints, or giving plates of diseased, carious bones? When once you have imbibed a true knowledge of disease and of the human body, don't you see the futility of this practice? and has not experience proved to you the quackery and perniciousness of such medical practice? Without entering into this author's mode of treatment, I shall merely lay before the reader the cases stated, and allow him to form his own opinion from them."

Case 1. A man with a diseased knee died in two months after admission.

2. A young man, leg amputated after eight months' confinement.

3. A middle-aged man, diseased liver, and swelling of knee: died in two months.

4. A man, forty-seven years of age, after being four months in the hospital, dismissed nearly as well as when he entered.

5. A young lad, after a month, was dismissed as cured.

6. A middle-aged man, after five months' residence in a hospital, was dismissed only better than when he was admitted; and fifteen months after, he was still a disabled man, not capable of any exertion.

7. A young gentleman, thirteen years of age, treated from July to November, when he was seized with a variety of disorders and died.

8. A man, forty years of age, was treated for months; dismissed, though not cured: returned again worse than ever. He does not say how it ended.

9. An aged woman was treated a month, and dismissed as cured.

10. A gentleman, of forty-five years, under treatment from 1817 to 1822. At last, having got *vinum colchici*, he recovered.

11. A gentleman recovered from *vinum colchici*.

12. A young lady, felt pain in the thigh and knee; was put to bed, and fever coming on, died in a week.

13. A middle-aged man, complained of pain in the shoulder; was seized with fever, and died.

14. A diseased knee, sent for examination.

15. A young woman, after five months in the hospital, had her leg amputated.

16. A young man, after two months in the hospital, shared the same fate.

17. A young man, after ten months in the hospital, lost his leg.

18. A boy, of six years, after twelve months in the hospital, leg amputated.

19. A lad, after two years going to and from the hospital, leg amputated.

20. A young man, leg amputated.

21. An old man, leg amputated.

22. A boy, eleven years, died.

23. A boy, twelve years, died.

24. A middle-aged man, died.

25. A case of examination in a dissecting-room.

26. A boy, ten years, treated from April to October, and died.

27. A girl, of seven years, treated four months, and died.
28. A man, treated three months, and died.
29. A young man, treated five months, and died.
30. A young woman, treated three months, and died.
31. A young man, treated four months, and died.
32. A lad, treated three months, and lost his leg.
33. A young woman, treated three months, and lost her leg.
34. A middle-aged woman, treated four months, and lost her leg.
35. A middle-aged man, treated four months, and died.
36. A middle-aged woman, was admitted, and died.
37. A young woman, treated more than a year, recovered a little the use of her knee.

“In all, this volume contains sixty-five cases, all terminating in the same unsatisfactory way ; and it is certain that, even in the most favourable cases, not one of them approaches to a radical, perfect cure ; and that if the patients who did not die could be called together and examined, they would declare that their pain and infirmities are far from gone. It is perfectly unnecessary to go through the various treatments, conjectures, and false doctrines set forth in the work—leeching, bleeding, blisters on the part, incisions, cutting out, embrocations, and a variety of fatiguing nostrums without meaning, and at last amputation ;—such are the means of cure recommended. Deluded people ! your lives and comfort sacrificed, by this barbarous science, surgery.”

### *Reformed Practice.*

The numerous cripples that are daily seen, and the amputations that are performed for this complaint, show that the treatment ordinarily pursued for it is not only ineffectual and injudicious, but exceedingly pernicious and dangerous. And it affords me much pleasure to give a course of treatment which I know by experience to be a most valuable remedy.

If the practitioner is called to a case of white swelling in the commencement, or in the stage of irritation or inflammation, his first object will be to remove it by resolution, or by such applications and treatment as will prevent the second or suppurative stage of the disease ; and this may often be done, provided a very prompt and energetic course be instituted. To fulfil this indication, make use of the following fomentation or process of steaming :

Take *Catnip*, (nepeta cataria,)

*Hearts of mullen*, (verbascum nigrum,)

*Wormwood*, (absinthium vulgare,)

*May-weed*, (anthemis cotula,)

Two double handfuls of each ; boil them in six quarts of water, together with a pint of *soft soap*, a sufficient time to obtain the strength of the herbs. Put the part affected over the steam, and cover it closely with a blanket for fifteen or twenty minutes.

Immediately after steaming, take a liquid and bathe the disease, made as follows :



Take half a gill of *spirits*,  
 Half an ounce of *camphor*,  
 A large table spoonful of *laudanum*,

The *marrow* of three hogs jaws, or, as a substitute, *lard* or *sweet oil*.  
 Simmer together on embers. Rub or bathe the swelling, more particularly downwards. The same course to be daily repeated; and should it not remove the complaint, then apply one of our common *strengthening plasters*.

To aid in reducing the swelling and inflammation, an ointment made by simmering the *cicuta leaves* in *spirits* and *lard*, may be applied three or four times a day, and alternated with the use of the stramonium ointment, made in the same manner.

This treatment, with frictions during the day, has been attended with an excellent effect, even without the use of any other medicine. It cured one lady in this city, for which other physicians could not render the least aid or benefit.

If it cannot be discussed or dispersed, apply the following poultice:

Take of *Dandelion roots*, (*leontodon taraxalum*,)  
*Hearts of mullen*, (*verbascum nigrum*,)  
*Catnip leaves and flowers*, (*nepet. cataria*,)

Of each, a handful. Bruise or pound the same in a mortar; after which, boil in sweet milk, until the strength is extracted; then stir in sufficient of the *slippery-elm bark*, (*ulmus fulva*,) to make a poultice of the proper consistence; apply to the parts, tepid or blood warm.

Steam or foment, as above directed, in the evening; and immediately after, apply the cataplasm or *poultice*, which must be kept on during the whole time, or until the swelling suppurates, there is a free discharge of matter, and the inflammation is measurably subsided.

After the swelling thus breaks or discharges, apply the following salve:

Take the bark of the root of the *wild indigo*, (*podolyria tinctoria*,) a bushel; boil till the strength is extracted; then strain, and again boil and skim. When most of the watery portion of the liquid has evaporated, add *fresh butter* ten pounds, *beeswax* three pounds, *mutton tallow* one pound and a half; simmer till all the water has evaporated; then again strain and skim; pour into a jar and cover; it is then fit for use. This forms a beautiful, fragrant and golden coloured *salve*, which is *detergent* and *healing* in its properties.

Let it be spread upon a piece of linen or muslin, and laid upon the ulcer; to be renewed morning and evening.

In white swelling, *fungus* or *proud flesh* is more apt to arise than in other ulcers. This arises, probably, from the seat of the disease being probably in the periosteum, and particular attention must be paid to prevent its growth, and to remove it when it is formed.

For this purpose, applications very mild may first be made, such as the fine powder of *blood-root*. If this does not remove it, sprinkle a few grains of the *vegetable caustic* upon it. Should it still remain after these applications, *Ferris' plaster* must be applied, to which a small quantity of *sulphate of zinc*, or *white vitriol*, has been added, in proportion of half a drachm or a drachm, pulverized, to an ounce of the plaster, to be well mixed or incorporated together. It should be

spread thin, upon a soft piece of leather or linen, and applied to the sore; and it may extend a little around the margin or edges of the ulcer. It may be kept on constantly, if the patient does not complain too much; otherwise let it be occasionally applied, or a sufficient length of time to fulfil the indication required. It has a peculiar effect upon the ulcer, destroying the fungous flesh without exciting inflammation, by producing a preternatural or greater discharge, which contributes powerfully to heal it. The strength must be regulated according to the feelings of the patient; and it ought to occasion very little if any pain.

I have ordered this plaster to be used constantly until the sore was healed, and when it excited any or too much pain or inflammation, have removed it, and substituted the *black salve* or *plaster*, and which agrees exceedingly well with the complaint. In some cases it answers a better purpose than the *yellow salve* above mentioned, and therefore both may be tried and used alternately; the one that produces the best effects may be constantly applied.

Owing to temperament, or idiosyncrasy, what will cure one will exasperate the complaint of another; in consequence of which, we find it advantageous to possess numerous medicinal agents.

*Sinuses* or *Openings*.—It is often the case that there are little openings or sinuses communicating from the surface of the ulcer down to the bone, or into the adjacent parts. When they appear, they should be kept open as long as possible. If they show a disposition to heal, let *tents* be introduced, on which is put some stimulating article. If they excite too much irritation, let them be removed, and a little lint occasionally crowded in with a probe. Where the parts are not too irritable, stimulating liquids may be injected into the ulcer, such as *soapsuds*, (Castile soap and soft water,) *weak ley*, a decoction of *wild indigo*, &c. I have, generally, however, found the patient unwilling or unable to bear the use of the syringe.

*Contraction of the Sinews, or Tendons*.—In addition to steaming the parts when the limb is contracted, bathe with the following oil.

Take *Oil of sassafras*,  
 “ *wormwood*,  
 “ *turpentine*,

*Neats-foot oil*,

*Gum camphor*, equal parts;

Mix; rub or bathe the sinews with this oil, or mixture, thoroughly, twice a day, near the fire.

*Callus*.—In almost all cases of white swelling, there is an enlargement, or *callus*, about the joints; and this often remains after the ulcers have healed, and throws the leg into a state of semiflexion, or such contraction, that the patient cannot touch it to the floor, or ground. To obviate this, in addition to what has been recommended, the above oil should be applied, and friction or rubbing the part three or four times a day, for half an hour each time; after which, let a *strengthening plaster* be applied to the parts.

*Internal Treatment*.—The general health must be attended to. The pale and unhealthy appearance of the countenance of children afflicted with white swelling, shows that there is a scrofulous or morbid

taint of the system ; and, therefore, it is of primary importance, while we apply proper local applications, that we improve the condition of the general health. To this end, let a *purgative* be given, once or twice a week ; let the *alterative syrup* be daily exhibited, according to the age and strength of the patient.

The following syrup is also excellent, and which may be used part of the time.

Take *Yellow dock-root*, (*rumex crispus*,)

*Bitter-sweet*, bark of the root, (*solanum dulcamara*,)

A pound of each ; cut or bruise ; add a sufficient quantity of water ; then boil till the strength is extracted, and simmer till there is two quarts ; add four pounds of loaf sugar. To a child five or six years old, a wine glassful may be given, morning, noon and night.

When the pain is very severe, and prevents sleep, let an *anodyne* be given.

This treatment I have found invariably successful where the disease has not proceeded too far, or where the constitution has not been too much undermined.

I have successfully treated patients labouring under white swelling, nearly in every stage of the complaint, when all other means have been tried in vain, and wherever the above treatment has been pursued, it has been attended with the same salutary effects ; and I, therefore, consider it one of the most valuable improvements in medicine or surgery.

When the patient is labouring under the most excruciating pain, one single process of steaming, or fomenting, in the manner described, usually operates as a charm in allaying pain and inflammation.

A part of this treatment, it is stated, came from one of the aborigines of this country, particularly the application of steam to the disease, in the manner here laid down. The other part of it I made use of before I came in possession of the remedy. A brief history of the method of obtaining the information, I will here give, as communicated to me. A person in New-Jersey, travelling in the western states, put up at a tavern in company with an Indian chief, or a number of Indians. They soon heard the groans of a boy, in an adjoining apartment, when one of the Indians inquired into the cause of it. He was told that he was afflicted with a white swelling, which, I think, was stated, had been given up as incurable. The Indian immediately said, if they would follow his directions, he could relieve, or cure him. To this they most cheerfully assented, and the prescriptions soon mitigated the pain, and subsequently proved a sovereign remedy.

The woman mentioned above, who was present at the time, obtained the remedy ; and such confidence had she in its virtues, after her return home, that she began to use it with great success among her neighbours, not only for *white swellings*, but for *felons*, *inflammation*, &c. Several of my friends spoke in the highest terms of the treatment pursued by this woman, and gave the most unequivocal proof and evidence of its efficacy. I did not, however, place much confidence in the treatment, from the circumstance that I had so often been deceived in different kinds of nostrums. Besides, the course that I had pursued, in the treatment of white swellings, had generally

been successful; and I, therefore, was less anxious to purchase the proposed remedy.

After a number of years, the person (Mrs. Moore) concluded to remove a great distance to the west; and a gentleman, a neighbour of hers, who had often witnessed its good effects, being unwilling that it should be lost, purchased the same almost exclusively for my use, and from whom I obtained the recipe; and, upon a fair trial of the course pursued, I find it quite an improvement on my former method. This improvement consists, principally, if not wholly, in the direct application of the *steam* of *stimulating* and *aromatic herbs*, or *medicinal plants*, with the addition of a part of the ingredients recommended for the *poultice*.

It is impossible for a practitioner truly to appreciate the immediate and sovereign effect of the fomentation made use of, or rather, the effect of the steam or heat, arising from the combination, except they make a trial of it. I have seen the languishing sufferer, nearly worn out with excruciating pain, so suddenly relieved, the transition or change so great, that the patient suspected that a dangerous or fatal dose of opium had been administered. It not only has an astonishing effect upon the parts immediately diseased, but a correspondent, or sympathetic one upon the whole system, and I have found it equally applicable and beneficial in case of *felons*, *inflammations*, and other painful diseases.

A patient has just called, who has been in great distress with a whitlow or felon, and who had tried a number of applications without much benefit, and to whom I recommended the process of steaming, a day or two ago; but he neglected to do so, apparently from the supposition that it was too simple to afford any relief, but after repeating to him the necessity of resorting to it, he steamed his hand thoroughly, by throwing the decoction, with the herbs, into a small vessel, placing his hand over it, and retaining the steam by a blanket. He states, that it gave *immediate* relief, *deadening* or *removing* the pain, and producing a free discharge of matter, and also lessening the swelling or inflammation.

I will here give the original formula, or mode of treatment, as I received it. There, probably, has been some alteration from the first that was given. By comparing this, with the treatment I have laid down, the variation made will be seen.

#### 1st. *Steaming* or *Fomentation*.

Take for the sweat, two double-handfuls of *catnip*;

The same quantity of *hearts of mullens*;

The same quantity of *double tansy*;

The same quantity of *wormwood*;

The same quantity of *may-weed*;

Boil them in six quarts of water, together with a pint of soft soap, a sufficient time to get the strength from the herbs.

Put the part affected over the steam, and cover the part closely with a blanket, for fifteen or twenty minutes.

Immediately after steaming, take a liquid, and bathe the part affected, made of half a gill of *spirits*, half an ounce of *camphor*, a large



table spoonful of *laudanum*, the *marrow* of three hogs' jaws, simmered together on embers; apply the liquid, and rub the swelling downwards.

Then apply a *poultice*, made of one handful of *dandelion roots*, one handful of the *hearts of mullen*, the same quantity of *catnip*. Boil them in sweet milk, and thicken with wheat flour.

Steam in the evening, and poultice every morning and evening, until the swelling breaks.

After the swelling breaks, apply a salve, made of one handful of *English clover*, a lump of *rosin* as large as a walnut, half a pound of *sheep's tallow*, one handful of *bitter-sweet berries*; stew slow on embers. Apply the salve twice every day.

Take an equal quantity of *red precipitate* and *loaf sugar*, with a small lump of *charcoal*, and powder them, to cleanse the sore of proud flesh.

If the sinews should be contracted, take a pint bottle, fill it half full of sweet oil, then fill it with *camomile flowers*. Let it hang in the sun for three days, taking it in every evening. Rub the sinews with it, twice every day, hard, and heat it in with a hot iron.

## CHAPTER XVI.

### VENEREAL DISEASE—(*Lues Venerea*—*Syphilis*.)

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#### *Description.*

THIS is a most loathsome affection, which extends to every part of the system, and is occasioned by a specific poison, conveyed by contagion or actual contact. It acts both locally and constitutionally.

#### *History.*

About the year 1494, or 1495, the venereal disease is said to have made its first appearance in Europe. Some writers believe that it originally broke out at the siege of Naples; but most of them suppose that, as Columbus returned from his first expedition to the West Indies, on March 13th, 1493, his followers brought the disorder with them from the new to the old world. Other authors, however, among whom are Mr. Beckett, (*Phil. Trans.* vols. xxx. and xxxi.) Mr. B. Bell and Dr. Swediaur, maintain the opinion, that the venereal disease was well known upon the old continent, and that it prevailed among the Jews, Greeks and Romans, and their descendants, long before the discovery of America. Another doctrine, not entirely destitute of ingenious arguments, and even containing many valuable truths, is, that the venereal disease, as it is considered in modern times, has no real existence as a distinct affection, arising from any particular virus, but is a name given to an assemblage of disorders of different kinds, to which the human race have always been subjected, from time immemorial.—(See a tract entitled, "*Sur la Non-existence de la Maladie Vénérienne*," 8vo. Paris, 1811.) One writer of high reputation believes, that, though syphilis was brought to Europe by the followers of Columbus, there existed, previously to that event, throughout the old continent, venereal disorders, both local and constitutional, which strongly resembled the newly-imported disease, and were for more than three centuries confounded with it.—(*R. Carmichael on Venereal Diseases*, p. 33. 8vo. London, 1825, 2d ed.) Mr. Bacot has bestowed great pains on an examination of all the passages in old works, affording any ground for the opinion, that syphilis existed in ancient times. He finds in them allusions to many local complaints of the genitals, warts, discharges, ulcers, pustules, &c., sometimes clearly ascribed to impure coition, but no distinct reference to any constitutional symptoms. "Surely," says he, "I may be allowed to say, that, if there is any historical fact that can be said to be proved, it is that of the origin of syphilis being referable to the latter years of the fifteenth century; for I cannot understand otherwise, why, at that precise period, we all at once hear of ulcers on the parts of generation

in both sexes, followed speedily by excruciating nocturnal pains, by corroding ulcers over the whole body, by affections of the throat and nose, and very frequently by death—when not one word that can be construed into any similar affection is to be met with distinctly stated by any writer before that period.”—(*J. Bacot, in Med. Gazette*, vol. ii. p. 100.) But, while this writer will not admit the truth of the existence of the venereal disease in times of antiquity, he allows that a disorder resembling gonorrhœa has been known from the remotest periods of history.

Although many considerations lead me to coincide with Hunter, Sprengel, Pearson and Bacot, in rejecting the common history of syphilis, as fabulous—I mean that account which refers its origin to America, or the French army in Italy—it does not appear to me that any utility would be likely to result from agitating this question in modern times; because, if it be true, as the most candid and intelligent surgeons of the present day generally acknowledge, that they cannot precisely define what the venereal disease is, nor always point out the exact circumstances in which it differs from some other anomalous complaints, even when the cases are before their eyes, how can such discrimination be attempted from a mere review of old descriptions, not accompanied with the advantage of a view of the living patients themselves? But, as far as the nature of the venereal disease has been unravelled, and it is allowable to judge from such comparisons, I may be permitted to remark, that, in degree of severity, acuteness of symptoms, rapidity of propagation, and extent and quickness of fatality, no forms of disease, however conjectured to be venereal, bear the least resemblance to the destructive malady with which the army before Naples was afflicted, at the close of the fifteenth century; nor will any ignorance of the uses of mercury, as will be presently noticed, explain differences so strongly marked. With reference to the contagious disorder which scourged a great part of Europe, at the close of the fifteenth century, there is a decree of the parliament of Paris, dated 1496, in which the disease is mentioned to have been then prevalent in that city two years; consequently, it was known there in 1494: yet the conquest of Naples, by Charles VIII., was not effected till 1495. It is clear, therefore, that the disease here alluded to could not have been derived from America. It appears to have been communicated from one person to another by the mere touch, residence in the same chamber, &c.; and, in fact, unless some other mode of propagation, besides coition, be supposed, its extension throughout Europe in two years would imply a depravity of manners quite extraordinary, and beyond all credibility. Another fact is, that, whatever the disorder might be, it was not of long continuance; and Guicciardini, the historian, who wrote a few years after its breaking out, assures us, that it had already become much milder, and undergone, of itself, a change into kinds different from the first.

Dr. Steward supposes that this disease originated in the camp of Israel, as may be inferred by reading the fifth chapter of Numbers. No doubt it was first inflicted upon mankind, as a curse, in consequence of departing from moral rectitude, or the law of God.

*Causes.*

The venereal disease is supposed to arise from a specific morbid poison, which, when applied to the human body, has the power of propagating or multiplying itself, and is capable of acting both locally and constitutionally.

Mr. Hunter was of opinion, that the effects produced by the poison arise from its peculiar, or specific irritation, joined with the aptness of the living principle to be irritated by such a cause, and the parts so irritated acting accordingly. Hence he considered that the venereal virus irritated the living parts in a manner peculiar to itself, and produced an inflammation peculiar to that irritation, from which a matter is produced, peculiar to the inflammation.

The venereal poison is capable of affecting the human body in two different ways: locally, that is, in those parts only to which it is first applied; and constitutionally, that is, in consequence of its absorption.

In whatever manner the venereal disease was first produced, it began, says Mr. Hunter, in the human race, as no other animal seems capable of being affected by it. He conceives, also, that the parts of generation were those first affected; for if the disease had taken place on any other part, it would not have gone farther than the person in whom it first arose. On the contrary, if the disease, in the first instance of its formation, be presumed to have attacked the parts of generation, where the only natural connexion takes place between one human being and another, except that between the mother and child, it was in the most favourable situation for being propagated; and Mr. Hunter infers, also, that the first effects of the disease must have been local, in consequence of the fact, now well established, that none of the constitutional effects are communicable to other persons; that is to say, infectious.

Thus, the numberless cases of the venereal disease, afflicting generation after generation, and observable in all the known parts of the world, are supposed to be originally derived from the amours of some unfortunate individual, in whom the poison was first formed, from causes beyond the reach of human investigation. Every modern speculation about the origin of the distemper promises but little instruction or success; because the question relates to a disease, the diagnosis of which is still very unsettled, and the complete definition of which has hitherto baffled men of the greatest genius and experience.

According to Mr. Hunter, the venereal poison is commonly in the form of pus, or some other secretion. In most cases, it excites an inflammation, which (to use the same author's language,) is attended with a specific mode of action, different from all other actions attending inflammation, and accounting for the specific qualities in the matter.

1st. *Gonorrhœa.**Symptoms.*

Gonorrhœa is a discharge resembling pus or matter from the urethra, with heat of urine, &c., after impure coition, to which often succeeds



a discharge of mucus from the urethra, with little or no dysury, called a gleet. This disease is also called *Fluor albus malignus*. *Blennorrhagia*, by Swediaur. In English, a *clap*, from the old French word *clapises*, which were public shops, kept and inhabited by single prostitutes, and generally confined to a particular quarter of the town, as is even now the case in several of the great towns in Italy. In Germany, the disease is named *tripper*, from dripping; and in French, *chaudpisse*, from the heat and scalding in making water.

No certain rule can be laid down with regard to the time that a clap will take before it makes its appearance, after infection has been conveyed. With some persons it will show itself in the course of three or four days, while with others there will not be the least appearance of it before the expiration of some weeks. It most usually is perceptible, however, in the space of from six to fourteen days, and in a male, begins with an uneasiness about the parts of generation, such as an itching in the glans penis, and a soreness and tingling sensation along the whole course of the urethra; soon after which, the person perceives an appearance of whitish matter at its orifice, and also some degree of pungency upon making water.

In the course of a few days, the discharge of matter will increase considerably; will assume, most probably, a greenish or yellowish hue, and will become thinner, and lose its adhesiveness; the parts will also be occupied with some degree of redness and inflammation, in consequence of which the glans will put on the appearance of a ripe cherry, the stream of urine will be smaller than usual, owing to the canal being made narrower by the inflamed state of the internal membrane, and a considerable degree of pain and scalding heat will be experienced on every attempt to make water.

Where the inflammation prevails in a very high degree, it prevents the extension of the urethra, on the taking place of any erection, so that the penis is, at that time, curved downwards, with great pain, which is much increased if attempted to be raised towards the belly; and the stimulus occasions it often to be erected, particularly when the patient is warm in bed, and so deprives him of sleep, producing, in some cases, an involuntary emission of semen.

In consequence of the inflammation, it sometimes happens that, at the time of making water, owing to the rupture of some small blood vessel, a slight hæmorrhage ensues, and a small quantity of blood is voided. In consequence of inflammation, the prepuce likewise becomes often so swelled at the end, that it cannot be drawn back, which symptom is called a phimosis; or, that being drawn behind the glans, it cannot be returned, which is known by the name of paraphimosis. Now and then, from the same cause, little hard swellings arise on the lower surface of the penis, along the course of the urethra, and these perhaps suppurate and form into fistulous sores.

The adjacent parts sympathizing with those already affected, the bladder becomes irritable, and incapable of retaining the urine for any length of time, which gives the patient a frequent inclination to make water, and he feels an uneasiness about the scrotum, perinæum and fundament. Moreover, the glands of the groins grow indurated and enlarged, or perhaps the testicles become swelled and inflamed,

in consequence of which he experiences excruciating pains, extending from the seat of the complaint up into the small of the back, he gets hot and restless, and a small symptomatic fever arises.

Where the parts are not occupied by much inflammation, few or none of the last mentioned symptoms will arise, and only a discharge with a slight heat or scalding in making water will prevail.

If a gonorrhœa be neither irritated by any irregularity of the patient, nor prolonged by the want of timely and proper assistance, then, in the course of about a fortnight or three weeks, the discharge, from having been thin and discoloured at first, will become thick, white, and of a ropy consistence; and from having gradually begun to diminish in quantity, will at last cease entirely, together with every inflammatory symptom whatever; whereas, on the contrary, if the patient has led a life of intemperance and sensuality, has partaken freely of the bottle and high-seasoned meats, and has, at the same time, neglected to pursue the necessary means, it may then continue for many weeks or months; and, on going off, may leave a weakness or gleet behind it, besides being accompanied with the risk of giving rise to a constitutional affection, especially if there has been a neglect of proper cleanliness; for where venereal matter has been suffered to lodge between the prepuce and glans penis for any time, so as to have occasioned either excoriation or ulceration, there will always be danger of its having been absorbed.

Another risk, arising from the long continuance of a gonorrhœa, especially if it has been attended with inflammatory symptoms, or has been of frequent recurrence, is the taking place of one or more strictures in the urethra. These are sure to occasion a considerable degree of difficulty, as well as pain, in making water, and, instead of its being discharged in a free and uninterrupted stream, it splits into two, or perhaps is voided drop by drop. Such affections become, from neglect, of a most serious and dangerous nature, as they not unfrequently block up the urethra, so as to induce a total suppression of urine.

Where the gonorrhœa has been of long standing, warty excrescences are likewise apt to arise about the parts of generation, owing to the matter falling and lodging thereon; and they not unfrequently prove both numerous and troublesome.

Having noticed every symptom which usually attends on gonorrhœa in the male sex, it will only be necessary to observe, that the same heat and soreness in making water, and the same discharge of discoloured mucus, together with a slight pain in walking, and an uneasiness in sitting, take place in females, as in the former; but as the parts in women which are most apt to be affected by the venereal poison, are less complex in their nature, and fewer in number, than in men, so of course the former are not liable to many of the symptoms which the latter are; and, from the urinary canal being much shorter, and of a more simple form, in them than in men, they are seldom, if ever, incommoded by the taking place of strictures.

With women, it indeed often happens, that all the symptoms of a gonorrhœa are so very slight, they experience no other inconvenience than the discharge, except, perhaps, immediately after menstruation, at

which period it is no uncommon occurrence for them to perceive some degree of aggravation in the symptoms.

Women of a relaxed habit, and such as have had frequent miscarriages, are apt to be afflicted with a disease known by the name of fluor albus, which it is often difficult to distinguish from gonorrhœa virulenta, as the matter discharged in both is, in many cases, of the same colour and consistence. The surest way of forming a just conclusion, in instances of this nature, will be to draw it from an accurate investigation, both of the symptoms which are present and those which have preceded the discharge; as likewise from the concurring circumstances, such as the character and mode of life of the person, and the probability there may be of her having had venereal infection conveyed to her by any connexion in which she may be engaged.

Not long ago, it was generally supposed that gonorrhœa depended always upon ulcers in the urethra, producing a discharge of purulent matter; and such ulcers do, indeed, occur, in consequence of a high degree of inflammation and suppuration; but many dissections of persons who have died while labouring under a gonorrhœa, have clearly shown that the disease may, and often does, exist without any ulceration in the urethra, so that the discharge which appears is usually of a vitiated mucus, thrown out from the mucous follicles of the urethra. On opening this canal, in recent cases, it usually appears red and inflamed; its mucous glands are somewhat enlarged, and its cavity is filled with matter to within a small distance from its extremity. Where the disease has been of long continuance, its surface all along, even to the bladder, is generally found pale and relaxed, without any erosion.

## 2d. *Chancre.*

From absorption of the venereal poison, little eruptions, scabs and ulcers arise on different parts of the head of the penis. It begins usually with an itching in the part. A small pimple, full of matter, generally arises, without much hardness, or apparent inflammation or swelling. The itching is gradually changed into pain, and is converted into an ulcer. Its base is hard, and the edges a little prominent. When it begins on the frænum, or near it, that part is very commonly destroyed, or a hole is made in it by ulceration. When the disease is more advanced, inflammation is apt to take place.

When the pain is severe, Mr. Hunter remarks, there is a strong disposition to irritation. Chancres also, sometimes, soon begin to slough, there being a strong tendency to mortification. Here he probably adverts to what are now usually called phagedenic sores, and frequently believed to differ from the truly venereal chancre.

It is also observed by Hunter, that when there is a considerable loss of substance, either from sloughing or ulceration, a profuse bleeding is no uncommon circumstance, more especially when the ulcer is on the glands. The adhesive inflammation does not appear to take place sufficiently to unite the veins of this part of the penis, so as to prevent their cavity from being exposed, and the blood escapes from the corpus spongiosum urethræ. The ulcers or sloughs often extend



as deeply as the corpus cavernosum penis, and similar bleedings are the consequence.

With respect to chancres in women, the labia and nymphæ, like the glans penis in men, are subject to ulceration, and the ulcerations are generally more numerous in females than males, in consequence of the surface on which the sores are liable to form being much larger. As Hunter observes, chancres are occasionally situated on the edge of the labia; sometimes on the outside of these parts; and even on the perinæum. When the sores are formed on the inside of the labia or nymphæ, they can never dry or scab; but when they are externally situated, the matter may dry on them, and produce a scab, just as happens with respect to chancres situated on the scrotum or body of the penis.

The venereal matter from these sores is apt to run down the perinæum to the anus, and excoriate the parts, especially about the anus, where the skin is thin, and where chancres may be thus occasioned.

Chancres have been noticed in the vagina; but Mr. Hunter suspected that they were not original ones, but that they had spread to this situation from the inside of the labia.

Before any of the virus has been taken up by the absorbents and conveyed into the circulation, a chancre is entirely a local affection. From the Hunterian doctrines, however, it would appear, that absorption must generally soon follow the occurrence of the sore; and all the modern opinions concerning the nature of ulceration itself, would lead to the same inference. Some persons appear much more susceptible of the effects of the venereal disease than other individuals. It is remarked by Hunter, that the interval between the application of the poison, and its effects upon the parts, is uncertain; but that, on the whole, a chancre is longer in appearing than a gonorrhœa. However, the nature of the parts affected make some difference. When a chancre occurs on the frænum or at the termination of the prepuce in the glans, the disease in general comes on earlier; these parts being more easily affected than either the glans penis, common skin of this organ, or the scrotum. He adds, that in some cases in which both the glans and prepuce were contaminated from the same application of the poison, the chancre made its appearance earlier on the latter part. Hunter knew of some instances in which chancres appeared twenty-four hours after the application of the matter; and others, in which an interval of seven weeks, and even two months, elapsed, between the time of contamination and that when the chancre commenced. However, here, as in almost all other statements about this perplexing subject, we never know with certainty that the writer has sufficient grounds for the assumed fact, that it is only one kind of poison which is spoken of.—(*Thomas.*)

### 3d. *Bubo.*

When the venereal poison is suffered to take its natural course, the absorbents take it up, and it becomes located in the glandular system, and the first part usually attacked, is the inguinal gland, or the groin. Between a local and constitutional affection, there often arises a kind



of intermediate state ; and that, in consequence of an absorption of venereal matter from some surface to which it has been applied, the glands situated nearest to the parts thus affected are apt to become indurated, swelled and inflamed, and so to give rise to a bubo ; and the parts of generation usually coming first in contact with the matter, so the glands in the groins are the most general seat of this particular symptom. In most cases the syphilitic virus is absorbed from a chancre or ulcer in the urethra ; but instances have occurred where a bubo has arisen without either gonorrhœa, or any kind of ulceration, and the matter appears to have been absorbed without any evident erosion of the skin or of the mucous membrane.

A bubo comes on with a pain in the groin, accompanied with some degree of hardness and swelling, and is at first about the size of a kidney-bean, but continuing to increase, it at length becomes as large as an egg, occasions the person to experience some difficulty in walking, and is attended with a pulsation and throbbing in the tumour, and a great redness of the skin. In some cases, the suppuration is quickly completed ; in others, it goes on very slow ; and in others again, the inflammatory appearances go off without any formation of pus. In a few instances the glands have been known to become scirrhus.

As many other swellings in the groin, such as a rupture, aneurism, lumbar abscess and scirrhus affection of the glands may be mistaken for a bubo, it will always be advisable, in doubtful cases, to inquire whether or not the patient has lately been afflicted either with a gonorrhœa or chancre ; and whether or not he has lately laboured under any other complaint that might have given rise to the swelling. It may likewise be advisable to attend to the progress which the tumour has made. By a due consideration and investigation of these circumstances, we cannot fail to form a just conclusion as to the real nature of the disease.

The following are the characteristics of a venereal bubo : the swelling is usually confined to one gland ; the colour of the skin where inflammation prevails is of a florid red ; the pain is very acute ; the progress from inflammation to suppuration and ulceration is generally very rapid ; the suppuration is large in proportion to the size of the gland ; and there is only one abscess.

A bubo is never attended with danger where the inflamed gland proceeds on regularly to suppuration ; but in particular cases it acquires an indolence after coming to a certain length, arising from a scrofulous taint ; or, by being combined with erysipelas, it terminates in a phagedenic ulceration, and occasions a great loss of substance. This termination is, however, more frequently met with in hospitals than in private practice, and may partly be attributed to the contaminated state of the air of the wards wherein syphilitic patients are lodged.

The many inconveniences that ensue from allowing a venereal bubo to suppurate, should induce the practitioner to exert his utmost endeavours to prevent it from proceeding to such a state, and to occasion its speedy resolution or dispersion, if possible.

4th. *Constitutional Disease*—(*Lues Venerea*.)

A constitutional taint is the third form under which it has been mentioned that the syphilitic poison is apt to show itself, and which always arises in consequence of the matter being absorbed, and carried into the circulating mass of fluids. The absorption of it may, however, take place in three ways:—

1st, It may be carried into the circulation without producing any evident local effect on the part to which it was at first applied :

2dly, It may take place in consequence of some local affection, such as either gonorrhœa, chancre, or bubo : and,

3dly, It may ensue from an application of the matter to a common sore or wound, similar to what happens in inoculating for the small-pox.

The most general way, however, in which a constitutional taint is produced, is by an absorption of the matter, either from a chancre or bubo.

When syphilitic matter gets into the system, some symptoms of it may often be observed in the course of six or eight weeks, or probably sooner ; but in some cases it will continue in the circulating mass of fluids for a few months before any visible effects are produced. The system being completely contaminated, it then occasions many local effects in different parts of the body, and shows itself under a variety of shapes, many of which put on the appearance of a distinct disease. We may presume that this variety depends wholly on the difference of constitution, the different kinds of parts affected, and the different state these parts were in at the time the matter or poison was applied.

The first symptoms usually show themselves on the skin, and in the mouth and throat. When the matter is secreted principally in the skin, reddish and brownish spots appear here and there on its surface, and eruptions of a copper colour are dispersed over different parts of the body, on the top of which there soon forms a thick scurf or scale. This scurf falls off after a short time, and is succeeded by another ; and the same happening several times, and at length casting off deep, an ulcer is formed, which discharges an acrid fetid matter.

When the poison is secreted in the glands of the throat and mouth, the tongue will often be affected, so as to occasion a thickness of speech : and the tonsils, palate and uvula will become ulcerated, so as to produce a soreness and difficulty in swallowing, and likewise a hoarseness in the voice.

The tonsils are more usually affected with syphilitic ulceration than the uvula or velum palati, though the affection may spread to these from the tonsils. The ulcer of the latter is an excavation, as if a piece was scooped out ; the sore has an uneven, jagged, foul appearance, with an erysipelatous redness on a hard, elevated, defined border ; the ulcer is commonly covered with a whitish or brown slough ; it is progressive, and, like the rest of the syphilitic symptoms, it is not curable by the powers of the constitution. Generally there is not much pain nor much enlargement attendant on this form of the

disease ; in other respects the sensations do not materially differ from those produced by ulceration of the throat proceeding from other causes.

If the disease affects the eyes, obstinate inflammation and sometimes ulceration, will also attack these organs.

The matter sometimes falls on deep-seated parts, such as the tendons, ligaments and periosteum, and occasions hard, painful swellings to arise, known by the name of nodes.

When the disease is suffered to proceed, and is not counteracted by proper remedies, the patient will, in the course of time, be afflicted with severe pains, but more particularly in the night-time ; his countenance will become sallow ; his hair will fall off ; he will lose his appetite, strength and flesh ; his rest will be much disturbed by night, and a small fever of a hectic kind will arise. The ulcers in the mouth and throat being likewise suffered to spread, and to occasion a caries of the bones of the palate, an opening will be made from the mouth to the nose ; and, the cartilages and bones of the nose being at length corroded away, this will sink to a level with the face.

It now and then occurs that primary symptoms followed by secondary ones present themselves, all closely imitating syphilis in its primary and secondary stages, and yet are not venereal. Symptoms resembling the secondary appearances of syphilis occur also without any preceding primary symptom, and turn out not to be venereal. In some of the cases, the symptoms go off, and the patient gets well without any remedy : in others, common alteratives have subdued the complaint. These complaints resembling the venereal disease, have been called by the name of *cachexia syphiloidea*, or *pseudo-syphilis*. Hunter\* has remarked, that undescribed diseases, resembling the venereal one, were numerous ; and Abernethy† has drawn the attention of medical men by his remarks on diseases resembling syphilis.

Some constitutions will bear up for a considerable time against the disease, while others again will soon sink under the general weakness and irritation produced by it. If the disorder is recent, and the constitution not impaired by other diseases, a perfect cure may easily be effected ; but where it is of long standing, and accompanied with the symptoms of irritation which have been mentioned, the cure will prove tedious, and in many cases uncertain, as the constitution and strength of the patient may not admit of his going through a course of medicine sufficient to destroy the poison.

### *Dissection.*

The general appearances to be observed on dissections of those who die of lues, are caries of the bones, but more particularly those of the cranium, often communicating ulceration to the brain itself ; together with enlargements and indurations of the lymphatic glands, scirrhus of several of the organs, particularly the liver and lungs, and exostosis of many of the hardest bones.

\* See his *Treatise on the Venereal Disease*. † See his *Surgical Observations*



*Common Treatment.*

Mercury is almost exclusively relied on by physicians, in all its different stages, and it was formerly the practice to salivate most profusely for this disease ; so much so, that the supposed remedy was much worse than the complaint itself, with all its horrors ; but modern practitioners prescribe mercury in such a manner, that its effects are not so extensive and mischievous upon the system ; although they frequently salivate, and cause a shocking state of the system, yet, in general, they withhold this mineral before these serious symptoms make their appearance. At any rate, this is the avowed design in prescribing it by the more judicious part of the faculty ; but, so unmanageable, so uncontrollable and uncertain is the operation of mercury, in different habits, that there is no reliance to be placed upon its effects. The physician cannot rely with any degree of certainty upon fulfilling one single indication.

Owing to temperament, and the peculiar state of the system, the physician is often sadly disappointed, or most egregiously mistaken, when he gives it. Oftentimes a single dose will cause a free salivation, and produce a universal derangement of the system, and the prescriber has the mortification to hear the anathemas of the patient hurled against him at every visit. And what else can he expect from such a deadly poison, from such a disease creating agent. The use of this metal, says Dr. Chapman, however cautiously administered, sometimes acts as a *poison*.

When I was an articled student at St. Bartholomew's Hospital, says Dr. Cooper, most of the venereal patients in that establishment were seen with their ulcerated tongues hanging out of their mouths ; their faces prodigiously swelled ; and their saliva flowing out in streams. The wards were not sufficiently ventilated, and the stench was so great that the places well deserved the appellation of *foul*. Yet, notwithstanding mercury was thus *pushed*, (as the favourite expression was,) it was then common to see many patients suffer the most dreadful mutilations, in consequence of sloughing ulcers of the penis ; many unfortunate individuals, whose noses and palates were lost ; and others who were afflicted with nodes and dreadful phagedenic sores.

Setting aside the unpleasant and injurious effects to which mercury subjects the venereal patient, there are other considerations of paramount importance for entirely dispensing with it ; which is principally the fact that *no preparation of mercury whatever*, according to the experience and observation that I have had, (and it has not been very limited,) has any power directly or indirectly, of curing the disease in any stage of it ; but, on the contrary, often exasperates, protracts the cure, and brings on the mercurial disease, which is much worse than any form of syphilis. It is frequently, itself, a source of cutaneous diseases, sore throats, and symptoms which, without its baneful influence, would never have occurred.

Is it not a startling fact, that this has never been discovered, with all the boasted learning and improvement of physicians ? All their



talents have been engaged to ascertain whether the venereal disease can be cured without mercury, whereas they have never yet learned, it appears, that it never was cured with it.

When Doctor Alexander H. Stevens first commenced his surgical course in the University of the State of New-York, I attended his lectures; and I recollect that he remarked, when speaking of the treatment of venereal disease, as follows: said he, "Gentlemen, I know not what to say to you on the use of mercury in the venereal disease; the whole medical world has been upset within a few years." He then went on to state the experiments which had been tried in Europe, in the military hospitals, which went to establish the fact, that in an equal number of venereal patients treated *with* and *without* mercury, those recovered the most speedily who did not submit to a course of mercury, and were treated merely by cleanliness, rest and abstinence, with the most simple and mild dressings.

Further to illustrate or corroborate what I have here stated, I shall give some observations and experiments made by British practitioners.

Dr. Fergusson assures us that, in Portugal, the disease, in its primary state among the natives, is curable without mercury, and by simple topical treatment; that the antisymphilitic woods, combined with sudorifics, are an adequate remedy for constitutional symptoms; and that the virulence of the disease has there been so much mitigated, that, after running a certain course (commonly a mild one) through the respective orders of parts, according to the known laws of its progress, *it exhausts itself and ceases spontaneously*.—(See *Med. and Chir. Trans.* vol. iv. p. 2—5.) In the third edition of the *First Lines of the Practice of Surgery*, it was sufficiently proved, from several conclusions drawn from the writing of Mr. Pearson, (*Obs. on the Effects of various Articles in the Cure of Lues Venerea*,) that venereal sores might be benefited, and even healed, under the use of several inert insignificant medicines. And the possibility of curing chancres and other venereal complaints without mercury, was long since remarked by Dr. Clutterbuck, who thence very justly inferred, that the healing of a sore without this remedy, was no test that it was not venereal.—(See *Remarks on the Opinions of the late John Hunter*, 1799.)

But although the whole history of the venereal disease, and of the various articles of the materia medica, if carefully reflected upon, must have led to the same conclusion, the truth was never placed in such a view as to command the general belief of all the most experienced surgeons in this and other countries of Europe. I do not mean to say that the truth was not seen and remarked by several of the older writers; for, that it was so, any man can convince himself by referring to several works quoted. But it is to be understood, all indecision could never be renounced as long as prejudices interfered with the only rational plan which could be adopted, with a view of bringing the question to a final settlement; I mean experiments on a large and impartial scale, open to the observation of numerous judges, yet under such control as insured the rigorous trial of the practice. Nor could such investigation be so well made by any class of prac-

tioners as the army surgeons, whose patients are numerous, obliged to follow strictly the treatment prescribed, without any power of going from hospital to hospital, or from one surgeon to another, as caprice may dictate, or of eluding the observation of the medical attendants after a seeming recovery. And here I must take the opportunity of stating, that as far as my judgment extends, the most important and cautious document yet extant, on the two questions of the *possibility* and *expediency* of curing the venereal disease without mercury, is the paper of Mr. Rose. At the time when Mr. Rose published his observations, he had tried the non-mercurial treatment in the Coldstream regiment of Guards, during a year and three quarters, and had thus succeeded in curing all the ulcers on the parts of generation, which he met with in that period, together with the constitutional symptoms to which they gave rise. "I may not be warranted in asserting (says this gentleman) that many of these were venereal; but undoubtedly a considerable number of them had all the appearances of primary sores, produced by the venereal virus, and arose under circumstances where there had been at least a possibility of that virus having been applied. Admitting that there is nothing so characteristic in a chancre as to furnish incontrovertible proof of its nature, it will yet be allowed, that there are many symptoms common to such sores, although not entirely peculiar to them, and whenever these are met with, there are strong grounds to suspect that they are the effects of the syphilitic virus. In a sore, for instance, appearing shortly after suspicious connexion, where there is loss of substance, a want of disposition to granulate and an indurated margin and base, there is certainly a probability of that poison being present. Among a number of cases of such a description, taken indiscriminately, the probability of some being venereal is materially increased, and must at last approach nearly to a certainty. On this principle, some of the sores here referred to must have been venereal. They were also seen by different surgeons, on whose judgment I would rely, who agreed in considering many of them as well-marked cases of true chancre.—(Rose, in *Med. Chir. Trans.* vol. viii. p. 357, &c.) The men thus treated were examined almost every week for a considerable time after their apparent cure, "both that the first approach of constitutional symptoms might be observed, and that any deception from an underhand use of mercury might be guarded against."—(p. 359.) Sixty cases of ulcers on the penis were also cured by Dease in the York Hospital, by means of simple dressings, the only general remedy being occasional purgatives. The practice was likewise extensively tried by Whymper and Good, surgeons of the Guards, with the same kind of success. In Mr. Rose's practice, all idea of specific remedies was entirely laid aside. The patients were usually confined to their beds, and such local applications were employed as the appearances of the sores seemed to indicate. Aperient medicines, bark, vitriolic acid, and occasionally sarsaparilla, were administered.—(p. 363.) "Upon an average, (says Mr. Rose,) one out of every three of the sores thus treated, was followed by some form or other of constitutional affection: this was in most instances mild, and sometimes so slight that it would have escaped notice, if it had not been carefully sought for. The

constitutional symptoms were evidently not such as could be regarded as venereal, if we give credit to the commonly received ideas on the subject. *Caries of the bones*, and some of the least equivocal symptoms, *did not occur*. In no instance was there that uniform progress, with unrelenting fury, from one order of symptoms and parts affected to another, which is considered as an essential characteristic of true syphilis.”—(*Med. Chir. Trans.* vol. viii. p. 422.) The constitutional symptoms also yielded, without the aid of mercury; and frequently primary sores, corresponding to what had been called the true chancre, with indurated base, were cured in this manner, yet were followed by no secondary symptoms. We are also informed, that “several cases occurred of a cluster of ill-conditioned sores over the whole inner surface of the prepuce: and behind the corona glandis; and also of a circle of small irritable sores, situated on the thickened and contracted ring at the extreme margin of the prepuce. These occasionally produced buboes.” *None of the sores of this description, met with by Mr. Rose, were followed by any constitutional affection.*—(Vol. cit. p. 370.) He bears testimony to the ill effects of mercury and stimulants in cases of phagedenic ulcers, and confirms a not uncommon opinion, that they are seldom followed by secondary symptoms, which opinion should be qualified with the condition mentioned by Mr. Guthrie, (*Med. Chir. Trans.* vol. viii. p. 565.) that no mercury be given. Lastly, as I have already stated, Mr. Rose observed, that most of the cases of papular eruptions followed ulcers, which were not very deep, and healed without much difficulty.—(p. 399.)

The fact of the *possibility* of curing every kind of ulcer on the genitals without mercury, has been fully confirmed by the statements of Mr. Guthrie, (*Med. Chir. Trans.* vol. viii. p. 558. 576.) Dr. J. Thomson, (*Edin. Med. and Surg. Journ. for January, 1818,*) Dr. Hennen, (*Op. cit.* Nos. 54 and 55, and *Principles of Military Surgery*, 2d ed.,) Mr. Bacot, (*On Syphilis*, p. 26, &c.,) and many other careful observers.

Respecting the comparative quickness of the cures of chancres, or reputed chancres, without the aid of mercury, much disagreement prevails in the different reports, even those collected by the same individuals, whose statements must therefore be deemed perfectly impartial, though inconclusive.—(See *Hennen's Military Surgery*, 2d ed. p. 536, &c.) Some of Mr. Rose's best marked cases of chancre, that is to say, such as were distinguished by the indurated base and circumference, healed in a very short time. But even respecting these, or any other kinds of chancre, no regularity on this point can be found. Mr. Guthrie observes, if the “ulcers were not without any marked appearance, and did not amend in the first fortnight or three weeks, they generally remained for five or seven weeks longer; and the only difference in this respect between them and the raised ulcer of the prepuce was, that this often remained for a longer period, and that ulcers, possessing the true character of chancre, required in general a still longer period for their cure, that is, from six, eight, to ten, and in one case, even twenty-six weeks, healing up and ulcerating again on a hardened base. Those that required the greatest length of time had nothing particular in their appearance that would



lead us to distinguish them from others of the same kind which were healed in a shorter time.”—(*Med. Chir. Trans.* vol. viii. p. 558.)

In relation to the question before us, one of the most important documents which I have met with, is an official circular, signed by Sir James M'Grigor and Sir Wm. Franklin, from which it appears that in 1940 cases of primary venereal ulcerations on the penis, *cured without mercury*, between December, 1816, and December, 1818, (including not only the more simple sores, but also a regular proportion of those with the most marked characters of syphilitic chancre,) the average period taken up by the treatment, when bubo did not exist, was twenty-one days; with bubo, forty-five days.—(See *Hennen's Military Surgery*, 2d. ed. p. 545.) And it farther appears, that, during the period above specified, 2827 chancres, a more considerable proportion of which were probably Hunterian chancres, were treated with mercury, and that the average period required for the cure, when there was no bubo, was thirty-three days; with bubo, fifty. As far, therefore, as a judgment can be formed from this official estimate, and no calculation is ever likely to be furnished on a larger or more impartial scale, the evidence tends to prove, that primary sores may generally be cured rather sooner without than with the administration of mercury, only by cleanliness, diet and rest.

[From the London Medical Gazette.]

*On the Application of Mercury to Venereal Complaints.* By S. D. BROUGHTON.

Usually, a mine of prejudice has been ready to explode when any *anti-mercurial* doctrines have been broached; and, in attempting to disturb theories sanctioned by age, and rendered orthodox from ancestral experience, the curse of modern heresy often attaches itself to the avower of that which many regard rather in the light of rash innovation than improvement.

I will not here dwell upon the often-told tale of the origin and progress of *lues venerea*, and the *blessing* conferred upon suffering humanity by the introduction of a supposed *specific* check to its ravages, in the form of mercury. Both bane and antidote have gone hand in hand together, during more than three centuries; nor is it my purpose to repeat the several well-known efforts made, from time to time, to lay the offspring of impurity, by the substitution of milder measures than such as are afforded by extensive and long-continued mercurial applications. These efforts have, indeed, generally fallen in time into disrepute, and the old remedy has been fondly and pertinaciously adhered to; the public has been taught to distrust the one, and to consider caution, safety and security, as the sure recommendation of the other.

I cannot glance at these successive efforts without offering a remark, (with which, I believe, well-informed, experienced and judicious practitioners will generally coincide,) that Mr. Rose's late introduction of an anti-mercurial treatment (though some, perhaps, may consider it as a failure) is one of the greatest improvements in modern surgery,



has made the most general impression, and has imparted the most useful direction to practice, of which the pathology of the present century can boast. I also consider Mr. Rose's doctrines to be further valuable, upon the ground that they do not inculcate the necessity of hunting after one specific remedy as a substitute for a discarded specific; but that they tend, on the contrary, to lessen the estimation so long cherished, of a dogmatical practice, introducing in its place a pathological theory and remedial measures, built on a far more rational foundation.

These doctrines have guided my practice some years, and experience has taught me not to distrust their truth, safety and value. I have not allowed myself to be scared, by imaginary dangers and terrors, into the adoption of an ancient dogma, too often followed upon the ground merely of *suspicion* and *probabilities*, when the alternative was the use of a powerful mineral—at the best, more or less a positive evil—the ultimate mischief of which, past and present history show to have been, and still is daily being, confounded with the effects of venereal poison, sometimes extending beyond calculation the chance of recovery, from its destructive ravages upon the constitution.

I aver that mercurial saturation tends to the destruction of mucous membranes, the removal, by morbid absorption, of soft parts, and the disorganization of the osseous substance.\* The *mind*† itself has suffered, the constitution received a baneful impression, and pulmonary consumption‡ has not unfrequently terminated the patient's earthly career, when the system has undergone mercurial saturation; while the wretched victim of imbecility or imprudent rashness has been commonly reported (with ill-timed levity) to have died of "*the breeches fever*." Is it not better that we should

"———rather bear those ills we have,  
Than fly to others that we know not of?"

I do not, however, contend for the entire abolition of mercury in venereal complaints; like the abolition of slavery, it must be done with care and caution, from regard both to the moral and physical constitution.

\* A young gentleman went through a full course of mercury; symptoms of phthisis pulmonalis followed repeated inflammatory attacks of the chest, and several deep holes were formed in the forehead, in the manner called *corona veneris*, but more properly should be *corona mercurii*. This patient did not die; but his head is marked, his constitution debilitated, and he is liable to sore throat and acute catarrhal affections, and has been obliged to pass much time in the south of Europe, to the detriment of his professional advancement in his own country.

† The brother of a fellow-student of the author, constitutionally strumous, went through a full course of mercury, and in a few weeks he was placed in a private mad-house.

‡ A respectable unmarried tradesman in the city, 30 years of age, went through a full mercurial course. Impaired digestion, irregular bowels, symptoms of phthisis pulmonalis and diarrhœa followed. He was removed to the seaside, and there died of hydrothorax, &c.

A young nobleman used mercury to a very considerable extent. Consumptive symptoms, &c. ensued. He was sent to the south of Europe, and there died.

Though “ custom be the plague of wise men, and the idol of fools,” the deep-rooted prejudices which it implants require gradual steps to eradicate them; and there may occur certain cases, wherein a *judicious* application of mercury will be serviceable and inoffensive. But Mr. Rose’s mass of evidence has shown how easily we may wean ourselves of the practice, and that the suspension of the mercurial plan is a bugbear, the fear of which has intimidated too much, and been carried unnecessarily far. At the same time, it appears to me, that the adoption of mercurial remedies is more frequently the act of temerity than is its rejection—at least as it is frequently applied. And I trust it is not extravagant to believe, that *Mercury* is often more to blame than *Venus*, or that the destroying sword of the *god* does more execution than the insidious blandishments of the *goddess*.

These remarks have been elicited, not only from having repeatedly observed the safety of an anti-mercurial practice, but also the frequent terrible consequences of the contrary method; consequences which, I do not hesitate to declare, sometimes far, very far, exceed what it is possible to conceive from the progressive steps of venereal taint in the constitution. Then is mercury so mild and safe a remedy in its action that it may be indiscriminately used in *all cases of suspicious sexual intercourse*? Independently of otherwise removing the complaint possibly, even if suspicion be justly formed, is no time to be allowed to give the disease fair play, and declare its nature and character? Is no account to be taken of the many little constitutional and local circumstances which aggravate an excoriation, ulcer or bubo, or produce some cutaneous eruption, easily removed by a little patient care and judicious treatment, without saturating the system with mercurial ointment and pills? Yet such is a very common practice, especially with *general practitioners*; so that amongst high and low, rich and poor, a *sufficient course of mercury* is generally recommended to the patient; and he must get out of the scrape as well as he can—if matters go wrong, by aid of sarsaparilla, the seaside, mild climate, &c. &c. Then, sometimes, it is thought, the *poison lurks in his bones*, or his throat (perhaps extensively ulcerated) shows that he has not had a *sufficient quantity to destroy the venom*, and therefore a little more mercury will do for him, (and quickly, too, in a scrofulous habit,) when Nice or Naples will, probably, set him to rights again, and restore his constitution; and if it does, he may esteem himself very lucky to return with a sound skin and whole bones, &c.

Now these are not imaginary cases, and, were it necessary, which it is not, a multitude of instances might be cited in proof, many of which have passed under my personal observation. Many cases might be shown to have done very well without mercury; many in which this remedy was totally unnecessary, though not, perhaps, injurious to the health; and many in which the abuse of mercury has produced distressing and protracted mischief, and, in some instances, ultimate dissolution, from a train of superinduced disorders.

On the other hand, few, I believe, if any cases, can be authenticated, in which the venereal disease, (as it is termed,) when left to itself, has produced any such consequences as those to which I have alluded above, without the aid of mercury.

The common *cant* is to attribute cases which get well without mercury, to what is called *pseudo-syphilis*, a term which is perfectly gratuitous.

Those whose prejudices are invincible, believe that all cases healed without mercury cannot have been venereal. With the example of Portugal before us, and some other countries, and the long trial which Mr. Rose gave the anti-mercurial system, I conceive such inferences to be wholly unwarranted. I have taken about *three hundred and fifty* recorded cases of ulcers of the penis, admitted and treated in the regimental hospital of the 2d Life Guards, *one hundred and fifteen* of which appear to have used mercury in different forms and proportions, and for different periods of time ; so that about *two hundred and thirty-five* cases of primary symptoms, following sexual intercourse, have been healed by other means than mercurial remedies, as well as many not in the list.

The number of secondary cases of symptoms following the primary venereal disorder during the same period, amounts to about *twenty-two, out of three hundred and fifty*. And, upon following up the narratives of these, it appears that the majority were generally simple cases of *lichen*, which got well without mercury, and in no long time. The greater part of those cases which were protracted, and attended with ulcers of the throat, pains of the limbs, nodes, &c., were originally treated with mercury in the hospital, and the rest showed that mercury had been clandestinely procured at some period or other during the progress of the complaints. The simple cases of lichen, &c., were chiefly found amongst the men *not* treated with mercury, *while the most protracted and troublesome cases occurred with those who had been fully subjected to its operation.\** Since the use of mercurial saturation has been suspended, no cases have occurred to throw any distrust upon the propriety of the practice ; and the few cases of secondary symptoms were generally mild and trifling, compared with those which followed mercurial treatment, and readily yielded without mercury.

I do not pretend to enter upon any nice discriminations of practice, or to draw a line between cases requiring and cases not requiring mercury, nor to describe such as mercury will aggravate. Indeed, I am aware of no satisfactory rules to guide the practitioner in this respect, but those which he himself derives from a sound judgment and experience. I wish merely to assist in establishing the fact, that venereal sores admit of treatment without mercury and without cause of alarm ; the secondary evils of mercury being usually far more destructive than those which arise from venereal taint, and that the one case is often mistaken for the other. Consequently, it appears to me, that there is more security in omitting to push a mercurial course, than in adopting it ; that comparatively few cases occur requiring mercury ; that the perils of mercury are sometimes manifold and terrible ; that at all times it entails more or less personal inconvenience and annoyance, and frequently leads to a train of ultimate symptoms, from which er-

\* And such I have always found to be the case elsewhere.



roneous inferences are made, and a useless, if not mischievous practice adopted, the effects of which cannot be foreseen, and their limits no man can calculate upon.

In my dispensary practice I have had frequent occasion to observe the great danger of pushing a course of mercury, when the patient is not under the surgeon's control as to diet, temperature, &c. An error, made in the treatment of sores on the penis with persons going about, and exposed to sudden changes of temperature, to cold winds, or wet, is too often irretrievable. The labouring classes in London, perhaps not living on the best diet, nor possessing sound constitutions, exhibit frightful examples of the imprudent use of mercury; the effects of which, from some cause or other best known to themselves, there are practitioners, (chiefly in private practice,) who are constantly disposed to attribute to syphilitic action and deficient mercurial saturation. This propensity, indeed, I remember once to have heard very satisfactorily accounted for in a medical debating society, by a candid avowal, that if the anti-mercurial mania continued to spread, "*it would be ruin to the apothecaries and general practitioners.*" Therefore, the inference drawn from this *liberal* sentiment was, that it is better to be on the *SAFE* side, and not to hazard the adoption of modern heretical opinions, against the "*wisdom and experience of our ancestors.*"\*

My attention has been particularly drawn to the subject of this paper lately, from the circumstances of the following cases affording a tolerable sample of the effects which the *blessing* handed down to us by our forefathers is capable of producing. [Here follow several cases illustrating these views.]

The above six cases are selected from a stock containing many similar; but it is not so much my object to accumulate examples of the points to which I have referred, as to illustrate some of my positions. Instances of the above description have often fallen under my notice in hospital and dispensary practice, and some could be produced from among private patients; and such are, doubtless, to be found in the records of cases which must occur to the remembrance of other practitioners. I am induced to believe, both from the foregoing facts and observations, and those which are put forth by Dr. Thompson, of Edinburgh, Dr. Ferguson, (late inspector general of the Portuguese army,) Mr. Guthrie, and others—

1. That all the forms in which venereal complaints present themselves are to be removed without the aid of mercury; and this is more especially and remarkably the case in regard to the secondary symptoms of the disease.

2. That mercury has formerly been, and frequently is still, used in an unnecessary, indiscreet and highly dangerous manner.

3. That mercury, *judiciously* and *alteratively* used, is not only an excellent, but perhaps the best remedy in many venereal complaints;

\* It is, however, to be hoped, that the gentleman who avowed this motive was as much in joke as the wag who declared that the first standing toast at the College of Physicians' dinners, was always "*a slow fever,*" with three times three!



nevertheless, a tithe of the quantity anciently administered is generally sufficient, and more than sufficient, probably, to eradicate the primary symptoms; while, again, a tithe of that tithe, or a centime, has been found competent to eradicate the secondary stage of the disease.\*

4. That mercury is very far from being a certain preventive of the secondary train of symptoms, in any form or quantity.

5. That mercury, when pushed far, induces ulceration of the mucous secreting surfaces, more especially of the inner palate, throat and fauces, as well as affections of the bones, so exactly resembling those ascribed to true syphilis, that the most experienced surgeon cannot detect any difference. In the hands of the members of the old school, mercury, in fact, creates its own work, by establishing diseases which have too often been confounded with venereal poison, and thereby led to a most dangerous and destructive practice.

6. That the train of symptoms following mercurial treatment has been found more severe and difficult to remove, than that which follows primary venereal sores *not* treated with mercury; and that repeated relapses into secondary symptoms are removed with increased facility every time they occur, (as if the disease wore itself out,) in cases wherein no mercury has been given.

7. That mercury tends to undermine the healthy state of the constitution, to establish, in some instances, and in others to aggravate, constitutional diseases, to increase constitutional irritability, to excite inflammation and ulceration in, and to destroy the mucous textures of, the body, to promote morbid absorption and removal of the fatty, fibrinous and osseous substances of the system, and to induce synovial, albuminous and serous accumulations in the respective cavities lined with the membranes producing such secretions.

8. That the extent and injury to the soft and bony parts of the system, arising from the action of mercury, is far more dreadful than any primary or secondary effects of venereal poison.

9. That mercury never was a *specific* against the venereal poison; for relapses were constantly occurring during its fullest operation; nor possessed any virtue in the cure of the disease; and that the creed so long believed in, (to the ruin of the health of multitudes, through mercurial salivation,) of its indispensibility towards the cure, and the destruction of the patient if omitted, is utterly false and groundless; facts which can admit of immediate, every-day demonstration, in the many thousands of the healthiest British soldiers, *who have been easily, effectually and permanently cured of every stage of the venereal disease, without ever having taken one particle of mercury.*

The bigoted adherence to a belief so false, and so universal, in which the wisest and most philosophic of our profession blindly par-

\* Vide Abernethy on his imaginary *pseudo-syphilis*, who cured so many of the worst cases of the disease with so little mercury, that he actually distrusted the work of his own hands, and therefore summoned the trustiest of his brethren of the old school, to vouch for the impossibility of the diseases so treated being truly syphilitic.

anticipated, will be quoted by after ages as a national reproach ;\* and, as it has indeed already done, will, it is to be feared, go far in destroying our confidence in all medical dogmata, or any doctrines, whatever.

10. That mercury is wholly inadmissible in cases of *sloughing* sores of the penis, wherein there is preceding high inflammation and tumefaction of the parts affected, attended with fever ; as it aggravates the local symptoms, and increases continual irritation ; and that *mercury is inadequate to the cure in such cases, specific contagion being superseded by violent inflammatory action*, which is too rapid in its course to be overtaken by the accumulative power of mercury, or by any remedies but those which act immediately and directly upon the symptoms of danger.†

[From the Journal des Progres des Sciences et Institutions Medicales.]

#### *Non-mercurial Treatment of Syphilis.* (Communicated by M. GANTHER.)

Dr. Fricke, of Hamburg, after a long series of experiments, made in the general hospital of that place, has at length published the results of his observations on the non-mercurial treatment of this disease. The regulations of that hospital particularly adapt it for observations of this nature ; the venereal patients are long subjected to the examination of the physician, and he is consequently enabled to ascertain with correctness. In support of this method of treatment, it may be alleged, 1st, that the primary symptoms were more speedily cured, than by the employment of mercury ; 2d, the unpleasant consequences sometimes occasioned by that mineral were avoided, and, 3d, the cicatrices or scars presented generally a better aspect.

#### *Reformed Practice.*

##### 1. *Gonorrhœa.*

Having shown the inutility, and in some degree the injury of mercury, or the common practice, in the venereal disease, I shall now lay down such a course of treatment as I have found speedily to remove the disease ; and, in justice to the efforts of nature, I must add, that gonorrhœa, as well as other venereal affections, are sometimes spontaneously cured, and very generally by a simple and mild treatment, such as cleanliness, simple dressings, diet and regulation of the secretions. At the same time, by the use of more active means, the disorder may be sooner eradicated.

\* This time has already arrived, and this *bigoted adherence to a belief so false in the use of mercury* I now quote, and pronounce with thousands of others, “*a national reproach.*”

† It has occurred to the author to notice two distinct examples of destruction of the penis—in one case entirely, and in the other reducing it to a short stump—following the application of mercury, to sloughing sores on the penis, consequent to inflammation and fever.

The practitioner is usually called to prescribe first for gonorrhœa. There is swelling, inflammation and pain of the parts, with heat and scalding, and difficulty of making water, from which symptoms the indications are clearly inferred, which is promptly to subdue the inflammatory symptoms ; to effect which, the following mixture will be found very effectual :

Take *Spirits of nitre*, (spts. nit. dulc.,) 1 oz.

*Spirits of turpentine*, (ol terebinth,)  $\frac{1}{2}$  oz.

*Oil of almonds*, (ol amygdalis,) 1 oz.

*Balsam of copaiva*, (bals. copaivæ,)  $\frac{1}{2}$  oz.

Mix, and add half a scruple of *gum camphor*. Dose, a small teaspoonful three or four times a day, to be given in half a wineglassful of the mucilage of *gum Arabic*, and to be accompanied with the use of *spearmint tea*. These drops generally mitigate the symptoms in a few hours, and entirely remove them in a few days.

When the heat and scalding of the water have subsided, should there remain any discharge or gleet from the urethra, a refrigerant and gently stimulating injection may be introduced. A strong decoction of the *blood-root* or *sanguinaria Canadensis* may be injected three times a day ; two or three small syringes full each time. Should not this diminish the discharge, and act favourably, introduce the following liquid :

Take eight grains of *white vitriol*, pulverized,

Sixteen grains of *borax*, pulverized ;

Add eight ounces of *rain* or *soft water*. To be used in the same manner ; and if there is much swelling or inflammation, wet a piece of linen or muslin in the liquid, and apply to the parts. I have not, however, found very great benefit from injections ; besides, if given too strong, they are apt to be followed by suppression of urine or disease of the testicle.

It will be necessary, also, from the commencement of the complaint, occasionally to give a *purgative* ; and I have a particular choice in this class of medicines, there being a great difference in the action or properties of them. Every kind of cathartic appears to have some peculiar effect upon the system, acting more especially upon certain parts or organs. I formerly employed, in this complaint, our common purgative, the base of which is jalap, and with it I succeeded very well ; but, as far as my observation goes, I have found the *podophyllum peltatum* much better, although its operation is not quite so pleasant. I have sometimes thought that it appears to have a specific effect in the venereal disease ; whether in consequence of acting more generally upon all the secretions or not, I am unable to decide. I also find that those who have used it, speak highly of its virtues. It may be given as follows :

Take *mandrake* or *May-apple*, (*podophyllum peltatum*,) 2 parts,

*Cream of tartar*, (*supertras potassæ*,) 1 part,

*Spearmint*, (*mentha sativa*,) 1 part ;

Pulverize each article separately, then mix. Of this give thirty or forty grains, or an ordinary sized teaspoonful. The best method of taking it, is to put the powder into a teacup, with a small piece of loaf sugar : add a gill of boiling water, and, when cool, let it be taken.



When it operates, give oatmeal or indianmeal gruel. It proves a very cleansing or detergent cathartic, evacuating the whole alimentary canal, and acting in a greater or less degree upon all the secretions and excretions. This preparation may be repeated every two or three days, or according to circumstances, the stage, severity of the disease, &c.

This is sufficient to remove the symptoms of gonorrhœa. Occasionally, as under every kind of treatment, a troublesome gleet is left, unaccompanied with any other symptoms. Should this be the case, the same means must be continued until it is removed; and should it prove very obstinate and protracted, recourse must be had to the same treatment as is recommended for a general taint of the system, or a constitutional affection. The patient must resort to tepid bathing, country air and a restorative diet. He must make use of a *sparè* diet, when there is inflammation, and *abstain* from all spiritous and fermented liquors.

I have omitted to mention, that in case a chordee attend the complaint, the patient should take an *anodyne* at bedtime, and bathe the parts with the marshmallow ointment; and should the skin of the prepuce retract, and become very much inflamed or swelled, a poultice must be applied. Should a swelling of the testicle come on, it must be bathed with the stramonium ointment, and if the inflammation be very considerable, the leaves may be simmered with vinegar, and applied as before stated.

### Chancres.

The second local form under which the syphilitic poison has been mentioned to show itself, is that of a chancre: this is distinguished by a want of disposition to heal, a thickened base, and circumscribed inflammation, with other characteristic marks already noticed.

The parts most apt to be affected with these ulcerations in men, are the prepuce, the frænum, at the orifice of the urethra, and in the angle between the glans and body of the penis; and in women, about the labia, nymphæ, and clitoris; but in some instances they have extended into the vagina, and even so far up as the os uteri. Syphilitic matter, by being applied to other parts of the body covered with a mucous membrane, such as the lips, nostrils, &c. may give rise to chancres there also; but, being most usually applied to the organs of generation, in consequence of an intercourse between the sexes, these are generally the seat of such ulcers.

A chancre makes its appearance either with a slight inflammation, which afterwards ulcerates; or there arises a small pimple or pustule filled with a transparent fluid, which soon breaks and forms into a spreading ulcer. The period at which it makes its appearance after infection is very various, being most commonly in five or six days, but in some cases not till after the expiration of as many weeks.

As there is always a risk that an absorption of matter may take place from a chancre, and possibly very speedily, it will not only be necessary to attend to the ulcer, but likewise to secure the constitu-



tion by a use of such remedies as are well known to possess the power of counteracting the syphilitic poison.

The treatment of chancre must be very similar to that of an ordinary ulcer. The inflammation must first be reduced, by applying the *elm bark poultice*, also the marshmallow ointment on a pledget of lint. When the inflammation has subsided, apply the *black salve*, and if the ulcer does not heal under this dressing, let it daily be sprinkled with the powdered *blood-root*, and subsequently, if it does not heal, with a mild *mineral caustic*. No irritation is excited by this powder, but it changes the character of the sore usually in twenty-four hours, causing it rapidly to heal. Every time the sore is dressed, it should be well cleansed with a mixture of Castile soap, soft water and spirits, and any collection of matter in the contiguous parts must be removed with the same.

I formerly was in the habit of using a wash made by adding about ten grains of the *corrosive sublimate* to ten ounces of *borax water*, and it makes a very cooling and astringent wash for venereal ulcers, without any danger of its being absorbed; but more recently, I have almost entirely dispensed with it, and used the applications mentioned above, in preference.

*Chancres* are often attended with that stage of the disease, called phymosis or paraphymosis, which renders it difficult to make any applications to the ulcers.

When this occurs, *poultices* and *cooling lotions* must be applied, and other means to remove the inflammation, before any thing can be done to the chancre. Sometimes it is necessary to apply them a number of days before the swelling subsides, but there is no necessity of dividing the prepuce as surgeons recommend, as it only requires a little time to accomplish that for which the operation is recommended.

In addition to these local applications, it will be necessary to attend to the constitution. The *mandrake* must be given as a purgative; and in addition, the following decoction is a good alterative, although I have repeatedly cured the complaint without using it.

Take *blood-root*, (*sanguinaria Canadensis*;) )

Bark of the root of *sumach*, (*rhus glabrum*;) )

Root of *blue flag*, (*iris versicolor*;) )

Bruise the roots, and make a strong decoction. Let the patient drink freely. This makes a very purifying or alterative decoction, and some botanical physicians rely almost exclusively upon the *blue flag* for the cure of the venereal disease, while others rely almost exclusively upon the *mandrake*.

Dr. Elisha Smith, who has written a work entitled the *Botanic Physician*, highly extols the use of the flag-root, in the following language :

“This root,” says he, “possesses great medicinal power, and, from a long experience of its use, I am convinced that it is equally as efficacious as mercury in all the diseases in which, in the common practice, it is supposed mercury is indicated. It serves as an alterative and sialagogue, in small continued doses, as a powerful drastic purge, a stimulant, a vermifuge, a diuretic, errhine, &c. It is a complete substitute for that mineral, for any of its purposes; and, being a vegetable, I consider it far preferable; because, after its operation and

effects, it passes off, and leaves the system free ; whereas, mercury fastens upon the bones and solids, and remains like a corroding and eating canker, rendering vast numbers feeble and debilitated for life. Such is the difference between these two articles of medicine ; and it would be a happy event for mankind, if physicians would, for once, divest themselves of their blind prejudices in favour of the *mineral*, and consent, at least, to make a trial of this *vegetable* substitute. Their humanity should be a sufficient inducement for this. The plea that the vegetable kingdom contains no equivalent to mercury, is no longer tenable. Then why should not physicians discard the use of it at once, when it is universally acknowledged and felt that in the aggregate it has proved a curse, a destroyer to the human race ?”

Under this treatment, should the chancres decrease very slowly, or in any respect become stationary, in addition to what has been recommended, the ulcer, or ulcers, may be sprinkled with a few grains of the *mineral caustic*, and afterwards poulticed.

This treatment is not only applicable to chancres, or ulcers, which appear upon the penis, but likewise to every species of venereal ulcer, in whatever part of the body they may appear.

### *Bubo.*

When the poison becomes absorbed, and affects the inguinal glands, particularly as before stated, it is termed a bubo, and our first object should be to discuss or disperse it ; to effect which, apply the *discutient ointment*, three or four times a day, rubbing it well in before the fire ; after which, a *poultice* may be made, by simmering the *cicuta leaves* in water, and when soft, the *slippery-elm bark* to be stirred in, to form a poultice, and it may be used constantly, but the night is the most convenient time. The patient should be pretty freely purged. Should this attempt to discuss the venereal tumour or bubo fail, and should the swelling and inflammation increase, suppuration will probably succeed, and it must be promoted by applying the following poultice. Take the root of *wild carrot*, (*daucus sylvestris*;) bruise, and simmer in milk, then stir in the elm bark, and apply to the part, to be secured by proper bandages.

When symptoms of suppuration appear, which will be known by the subsidence of pain and inflammation, with softness and fluctuation of the bubo, a small opening may be made to let out the matter, or it may be left a short time, to open spontaneously. After it has discharged freely, the poultice may be laid aside, and the *black plaster* or *salve* substituted. It should be washed with a little soap water and spirits, and if it does not heal kindly, to be treated as any other ulcer.

### *Constitutional Affection—Lues Venerea.*

If, from neglect or improper treatment, or peculiar temperament, or any other cause, the venereal poison is suffered to be absorbed and taken into the circulating mass, and thus contaminate and affect the whole system, our treatment must be varied, and adapted to this melancholy stage of the complaint.

It is customary, not only in the preceding stages of the disease, but likewise in this, to administer mercury, but there is no evidence of any good arising from it, but, as before stated, much mischief. The following statement of Doctor Hennen, shows still further the propriety of treating the venereal disease, even in the worst stage of it, without mercury, and also the ill effects arising from its use.

Carious affections of the bones, which are so common in persons treated by long mercurial courses, proceed, not from the disease, but from the remedy rapidly and irregularly thrown in while periostitis exists : and he has not seen a single case of carious bone in the military hospitals since the non-mercurial treatment was adopted, *except where mercury had formerly been used.*—(*On Military Surgery*, 2d. ed. p. 505, 506.)

Nor will the results of modern experience and inquiries, made on a very extensive and impartial scale, allow us to consider the venereal disease as regularly and unavoidably leading to any secondary symptoms, even though no medicine at all be employed for their prevention. This is fully exemplified in the official reports of the army hospitals. The particulars of 5000 cases, spoken of by Sir James McGrigor and Sir W. Franklin, lead to the opinion, that “the frequency or rarity of secondary symptoms would seem to depend on circumstances not yet sufficiently understood or explained, although the following fact would tend to the belief, that either the constitutions of the men, or the mode of conducting the treatment without mercury, are the causes that possess the greatest influence in their production. In one regiment, four secondary cases out of twenty-four, treated without mercury, supervened.” In another regiment, sixty-eight cases were treated without mercury, all bearing marks of the true venereal disease, (and twenty-eight of them especially selected for their decided characters of chancre,) yet no secondary symptoms of any kind had taken place fifteen months after the treatment had ceased.

Therefore, the investigations made in the military hospitals of Europe, without any other evidence, show conclusively that this disease can be cured without a particle of mercury ; and in Spain, and in the south of France, they likewise treat it without this poison.

When called to a patient labouring under this form of the venereal disease, the object should be to eradicate the syphilitic poison from the system ; and this must be effected by attending to the secretions of the system. It must be driven from it, the same as any other morbid affection.

The patient should take the same purgative as before recommended, viz. the compound powder of mandrake, once or twice a week, or according to circumstances. He will also commence and continue the use of the following concentrated *vegetable syrup* :

Take *sarsaparilla*, (*smilax sarsaparilla*,) 6 lbs., cut or split fine ;

Bark from the *sassafras* root, (*laurus sassafras*,) 2 lbs. ;

*Guaicum shavings*, (*guaic. officinal*,) 3 lbs. ;

*Elder flowers*, (*sambucus niger*,) 2 lbs. ;

Add a sufficient quantity of soft boiling water, or a little more than to cover the articles ; then let them stand on embers, or near a fire, twenty-four hours, properly to digest or steep, after which commence



boiling. In two or three hours pour off the decoction into an earthen vessel, again cover with water, boil the same length of time, and thus continue to add water, and boil five or six times, or until all the strength of the articles are extracted; after which remove them, and after straining the different boilings or the decoctions, let them be put together and again boiled until there are but sixteen porter bottles; then add twenty-five pounds of loaf or white sugar; again boil, to form a syrup. In order to clarify it, the whites of three or four eggs may be beat up and mixed with a pint of milk, and added to it, and, boiled a short time; the scum should be removed as it rises to the surface. It should now be passed through flannel, made in the form of a cone, and it is then fit for use. A wineglassful should be taken three times a day, before eating. During the use of it, the patient may take a strong decoction of the best Honduras sarsaparilla.

I have tried every preparation used by modern physicians, with most of the nostrums now so highly extolled, such as *Swaim's Panacea*, and other preparations, and after repeated and comparative trials for years, I find that the above syrup by far exceeds the whole of them. If there is any chance of recovery for the patient, or the disease is within the control of medicines, with proper agents accompanying it, this syrup will prove effectual. It requires to be given a length of time, in certain cases, before it has the desired effect. I know not the *modus operandi*, or how it acts on the system, nor is this of much consequence. The effect of it is enough for us to know, but it appears pretty evident that it must change the secretions, or eliminate the morbid matter by the skin, kidneys, bowels or intestines, although it has very little sensible effect upon any of these organs.

In very obstinate cases, fifteen or twenty bottles should be taken.

The surface should be daily bathed in weak ley water, and an infusion may be also alternately given with that of sarsaparilla, made of the roots or seed of *burdock*, *blood-root*, *sumach* and *blue flag* combined.

When there are sores in different parts of the body, as there usually are when there is a general taint of the system, apply the following wash three times a day:

Take *muriate of gold*, (*murias auri*,) eight grains;

*Rain water*, four ounces: mix.

If it is practicable, let lint be dipped in this liquor and applied to the ulcer, after which the *black salve*. Where there is much inflammation, apply the *marsh mallow ointment*. When the ulcers are situated in the throat or nose, the liquid should be applied repeatedly, by a piece of sponge fastened to a wire or stick.

Should the ulcers be very intractable and unyielding, they must be occasionally touched with the mineral caustic; the same as other ulcers.

This course, with me, has been invariably successful, even in those desperate cases where they have been abandoned, or given up, as incurable, by hospital surgeons and others. But much time and patience is often required to effect a cure in the worst variety of the complaint.



This treatment is also very beneficial in mercurial affections, which are usually connected with the venereal disease.

In concluding this chapter on the venereal disease, I have to remark, that there is one diagnostic symptom, which will enable the practitioner always to detect the real character of the venereal ulcer. It is the *peculiar fetid effluvia*, or *stench*, which arises from it. It is always of a most loathsome and sickening nature, and essentially different from that arising from any, and every other complaint.

## CHAPTER XVII.

### SCROFULA, OR KING'S EVIL.

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#### *Description.*

THE scrofula was so called, as is supposed, in consequence of swine being subject to this disease ; and it is vulgarly called the " King's Evil," from the custom of submitting patients to the *royal touch*.

The disorder consists in hard indolent tumours of the conglobate glands in various parts of the body ; but particularly in the neck, behind the ears, and under the chin, which, after a time, suppurate and degenerate into ulcers, from which, instead of pus, a white curdled matter, somewhat resembling the coagulum of milk, is generally discharged.

The first appearance of the disease is most usually between the third and seventh year of the child's age, but it may arise at any period between these and the age of puberty, after which it seldom makes its first attack. It most commonly affects children of a lax habit, with a smooth, soft and fine skin, fair hair, rosy cheeks, and a delicate complexion ; but it is occasionally met with in those of a dark one. It likewise is apt to attack such children as show a disposition to the rickets, and marked by a protuberant forehead, enlarged joints and a tumid abdomen.

The glandular system appears to be almost entirely, if not exclusively, the seat of the disease ; and in almost every instance it is located in the conglobate glands of the neck.

Writers, from their representation, make out almost every morbid taint of the system to consist of the scrofula. The lip disease, white swelling, chronic ophthalmia, and every morbid affection of the system, by them is pronounced "scrofulous." The term is entirely too extensive, at any rate, for practical purposes.

A physician of this city was called to a boy, who had a white swelling in the knee, and, upon being asked what it was, he said it was a scrofulous affection ; on which the mother asked him if he meant the king's evil, when he replied in the affirmative ! !

It is very probable that the proximate causes of almost all diseases are alike, but the diversity or variety of character which they present, depends upon the peculiar tissues or organs diseased. For instance, if the exciting cause of scrofula were to attack the joints, it would produce a specific complaint, entirely different from that which arises from the application of the same to the conglobate glands of the neck or other parts.

It has been supposed by many that the scrofula is hereditary, but we have no evidence of this, as it often appears in families whose predecessors, as far as they can be traced, have never had a vestige of it. Children born of scrofulous parents are not invariably affected

with scrofulous diseases ; and sometimes one child has some strumous affection, while the parents and all the rest of the family have no appearance of scrofulous habits.

Scrofula is not communicable from one person to another : neither can it be conveyed into the system by inoculation. The opinion, also, that scrofulous nurses may infect children, seems quite destitute of foundation.—(See *White*, p. 26, &c.)

Pinel and Alibert have purposely kept scrofulous and healthy children together in the same ward, without any of the latter receiving the complaint. Hébréard could not communicate the disease to dogs by inoculation. And G. T. Kortum, whose valuable work contains every thing known about scrofula at the period when it was written, tried in vain to impart the distemper to a child, by rubbing its neck every day with the pus discharged from scrofulous ulcers. Lepelletier, desirous of ascertaining the correctness of such experiments, has of late repeated them : he has made Guinea-pigs swallow scrofulous matter ; and he has injected it into the veins, and applied it to wounds ; but in no instance was there even a temporary appearance of the disease being communicated. The same author also mixed scrofulous with vaccine matter, and inoculated with it ; yet he never found the vaccine vesicle, thus produced, deviate in the least from its regular course. Lastly, Lepelletier inoculated himself with pus discharged from scrofulous sores, as well as with the serum collected under the cuticle of a strumous patient after the application of a blister ; but he remained free from every scrofulous ailment.—(See *Dict. des Sciences Méd.* t. 1. p. 294.) Goodlad inoculated himself several times with the discharge from scrofulous sores and abscesses, and the result was, that the disease could not be thus transmitted.

According to White, scrofula prevails more extensively in temperate latitudes, than in very hot or very cold climates. It is also more frequent in some parts of Europe than others. At all periods it seems to have been a very common complaint. From history, we learn that it was denominated the king's evil in the time of Edward the Confessor, who is supposed to have been the first that attempted to cure it by the royal touch. From a register kept in the royal chapel, we find that Charles II. touched 92,107 persons in a certain number of years ; and this equally bigoted and useless practice was not discontinued till a recent period, when kings were found to be, as well as their poorest subjects, totally destitute of all supernatural power.

Scrofula prevails most in those climates where the atmosphere is cold and humid, where the seasons are variable, and the weather unsteady. From latitude 45° to 60° is the principal climate of this disease. A long continuance of inclement weather may increase any predisposition to scrofula ; and in persons already much predisposed to it, any uncommon, though temporary exposure to wet and cold, is sometimes an exciting cause of an immediate attack. Besides climate and exposure to moist air and atmospherical vicissitudes, every other circumstance which weakens the constitution and impairs the general strength of the system, predisposes to scrofula ; thus, breathing impure tainted air, unfit for respiration, and living upon food of an unwholesome and indigestible nature, which does not afford proper

nourishment to the body, favours an attack of scrofula, by reducing the strength of the system, and making the person weakly. The neglect of due personal cleanliness, and of salutary exercise, indolence, inactivity, the want of warm clothing, confinement in cold, damp habitations, &c., may all be regarded as so many exciting causes, and satisfactorily account for the prevalence of the disease among children employed in large manufactories.

The influence of climate, says Gregory, is immense, and may be estimated by the following facts. In the East and West Indies, scrofula is hardly known; but when the natives of either are brought into this or any European country, they suffer from it severely. The prevalence of scrofula is directly proportioned to the coldness, or, more properly, to the *variableness* of the climate. Scrofulous affections are principally met with in all countries during the winter months. They rapidly improve, or disappear altogether, on the approach of summer; and this effect of warm weather upon scrofulous ulcers, is important in *diagnosis* as well as in practice. Among the causes of scrofula, the close, confined air of a town appears to merit especial mention. The complaint is infinitely more common among the inhabitants of a town, than among those of a corresponding class of society breathing the pure air of the country. It is notorious, that the population of our large manufacturing towns, pent up during the day, are, of all others, most afflicted with it. Certain modes of life contribute also in no small degree to the developement of scrofula; confined habitations, want of cleanliness, sedentary occupations, irregular habits, but, above all, deficient or unwholesome diet. They concur in reducing the tone of the system below that healthy standard, which is the surest preservative, not only against the attacks of scrofula, but of every other disorder. The extensive influence of debilitating causes, lastly, is demonstrated by the prevalence of scrofulous affections subsequent to small-pox, measles, hooping cough, and other diseases which most unequivocally impair the energies of the constitution. Of late years, attempts have been made to connect the scrofulous state, in a peculiar manner, with *primary* derangement of the digestive functions, but no sufficient reasons have been adduced in support of this opinion. It appears to me to be founded on very imperfect views of the mutual influence of the different parts of the animal economy upon each other.—(*Gregory's Practice*, p. 512.)

### *Symptoms.*

Among the earliest, the most frequent, and most characteristic symptoms of the disease, are swellings of the absorbent glands, particularly those of the neck. Such tumours sometimes continue for a long time, neither advancing nor receding, unattended by pain or any constitutional disturbance. Sometimes they subside spontaneously, but more frequently suppuration of an imperfect kind gradually takes place in them, followed by open ulceration. The ulcers heal slowly, leaving ragged and unsightly scars, and are succeeded by other tumours, which run a similar course. In this manner the disease is often kept up for a series of years, until at length, the constitution



strengthening, either throws it off, or it appears under some of its more severe and dangerous forms.

An opinion has been entertained, that 'in scrofula a *morbid matter* is generated which has a *specific* influence on the lymphatic system. What the circumstances, however, are, which in a scrofulous habit render the lymphatic system so peculiarly liable to inflammation, we know not. Scrofula affects other structures, and in all cases the inflammation which is excited has the same general character. It is of a chronic, languid kind. The scrofulous abscess is distinguished by its jagged and uneven sides. The pus which it contains, instead of having a bland, uniform, cream-like appearance, is thin, or *ichorous*, and mixed with curdy flakes. The ulcer by which it is succeeded has a smooth, obtuse, and overlapping margin. The surface of the sore is of a light red colour, and the granulations are flabby and indistinct. For a great length of time, in spite of every care, it remains indolent, neither increasing nor diminishing in size.

The attacks of scrofula, says a writer, seem much affected or influenced by the periods of the seasons. They begin usually some time in the winter and spring, and often disappear, or are greatly amended, in summer and autumn. The first appearance of the disorder is commonly in that of small oval or spherical tumours under the skin, unattended by any pain or discoloration. These appear in general upon the sides of the neck, below the ear, or under the chin; but in some cases other parts are affected.

After some length of time, the tumours become larger and more fixed, the skin which covers them acquires a purple or livid colour, and, being much inflamed, they at last suppurate and break into little holes, from which at first a matter somewhat puriform oozes out; but this changes by degrees into a kind of viscid serous discharge, much intermixed with small pieces of a white substance, resembling the curd of milk.

The tumours subside gradually, while the ulcers at the same time open more, and spread unequally in various directions. After a while some of the ulcers heal; but other tumours quickly form in different parts of the body, and proceed on in the same slow manner as the former ones to suppuration. In this way the disease goes on for some years, and, appearing at last to have exhausted itself, all the ulcers heal up, without being succeeded by any fresh swellings; but leaving behind them ugly puckerings of the skin, and scars of considerable extent. This is the most mild form under which scrofula ever appears.—(*Thomas.*)

Scrofulous inflammation (as Burns observes) is marked by a soft swelling of the affected part, which very frequently is one of the lymphatic glands. The covering or coat of the gland becomes slightly thickened, and its substance more porous and doughy. The swelling increases, and the doughy feel changes by degrees into that of elasticity, or fluctuation, and a firm, circumscribed, hardened margin, can be felt round the base of the tumour. The skin is slightly red. If, at this time, an incision or puncture be made, either no matter or very little is evacuated; the lips of the wound inflame and open, displaying a sloughy-looking substance within; and between this and

the skin a probe can often be introduced for some way all round. If, however, the disease should have advanced farther, then there is very little elasticity in the tumour; it is quite soft, rather flaccid, and fluctuates freely; the skin becomes of a light purple colour, and small veins may be seen ramifying on its surface. Some time after these appearances, the skin becomes thinner at one particular part, and here it is also generally rendered of a darker colour. It afterward bursts, and discharges a thin fluid, like whey, mixed with a curdy matter, or thick white flocculi. The redness of the skin still continues; but the aperture enlarges as the tumour subsides, and thus a scrofulous ulcer is produced. The margins of this kind of sore are generally smooth, obtuse, and overlap the ulcer; they are of a purple colour, and rather hard and tumid. The surface of the sore is of a light-red colour; the granulations are flabby and indistinct; and the aspect is of a peculiar kind, which, says Burns, cannot be described. The discharge is thin, slightly ropy, and copious, with curdy flakes. The pain is inconsiderable. When this ulcer has continued for some time, it either begins slowly to heal, or, as more frequently happens, the discharge diminishes and becomes thicker. An elevated scab is next formed, of a dirty white or yellowish colour. This continues on the part a good while; and when it falls off, leaves the place covered with a small purple cicatrix or scar. Burns adds, that the preceding description corresponds to the mild scrofula, or the *struma mansueta* of the old writers. Sometimes, especially if a bone be diseased below the ulcer, the sore has a more fiery appearance, the surface is dark-coloured, the margins soft, elevated, and inflamed, and sometimes retorted. The discharge is watery, the pain very considerable, and the surrounding skin inflamed. This has been called the *struma maligna*. Such overacting scrofulous sores are most frequently met with over the smaller joints, particularly those of the toes. Sometimes a scrofulous abscess, after it has burst, forms a sinus; the mouth of which ulcerates, and assumes the specific scrofulous appearance, while the track of the sinus still continues to emit a discharge. Scrofulous swellings are often disposed to subside in winter, and recur on the approach of summer; but this is not an invariable law. Glandular enlargements are very apt to become smaller, in a short time, in one place, while other glandular swellings originate with equal suddenness, somewhere in the vicinity of the former ones. Ulcers also very often heal upon the appearance of the disease in other parts.—(*Burns' Dissertations on Inflammation*, vol. ii. 1800.)

The glandular swellings which occur in syphilis, says Dr. Thomson, are of a more acute character than those which proceed from scrofula. They arise from the absorption of a specific poison; and they do not, like those of scrofula, admit of a spontaneous cure; a belief, however, now known not to be exactly correct.—(See *Veneral Disease*.) Chronic swellings of the lymphatic absorbent glands occur also in carcinoma or cancer; but these manifest little or no disposition to suppuration: they succeed most frequently to carcinomatous indurations, or ulcers existing in the neighbourhood of the glands affected; and they are accompanied in their progress and growth by a peculiar lancinating pain.—(*On Inflammation*, p. 135.)

*Common Treatment.*

There is nothing very definite in the treatment of this disease, laid down by physicians. It is considered by them incurable, and very little is done for it. Mercury by some is given, but with a decided injurious effect.

“For the cure of scrofula,” says Cullen, “we have not yet learned any practice that is certainly or even generally successful. The remedy which seems to be the most successful, and which our practitioners especially trust to, or employ, is the use of mineral waters. But, he adds, in very many instances of the use of these waters, I have not been well satisfied that they had shortened the duration of the disease more than had often happened when no such remedy had been employed. With regard to the choice of the mineral waters most fit for the purpose, I cannot, with any confidence, give an opinion. Almost all kinds of mineral waters, whether chalybeate, sulphureous or saline, have been employed for the cure of scrofula, and seemingly with equal success and reputation; a circumstance which leads me to think, that if they are ever successful, it is the elementary water that is the chief part of the remedy. Of late, sea water has been especially recommended, and employed; but after numerous trials, I cannot yet discover its superior efficacy.”—(*First Lines of Physic*, vol. iv.) On the subject of mineral waters, Dr. Thomson very properly remarks, that they are now usually employed as purgative and tonic remedies, and not as specifics. In employing them, it is often difficult to distinguish between the effects which they in reality produce, and those which are to be attributed to the slow operation of time, the season of the year, change of situation, alteration in the mode of life, or exercise in the open air.—(*Lectures on Inflammation*, &c. p. 195.)

*Reformed Practice.*

There are four particular states of this disease, which must be kept in view in treating it:

- 1st. A state of inflammation.
- 2d. A state of abscess or ulcer.
- 3d. A state of tumour or scirrhus.
- 4th. A state of constitutional affection.

*1st. A State of Inflammation.*

When the disease attacks a person with pain, swelling and inflammation, the following poultice must be applied:

Take the *wild* or *Indian turnip*, (*arum tryphyllum*;) if green or fresh, let it be bruised, a little rain or soft water added, and sufficient pulverized *slippery-elm bark* mixed with it, to form a poultice of a proper consistence. Let it be applied cold, and continued till it begins to be dry; then renew it. It often is necessary to apply three or four a day, according to the inflammation present.

Let this be continued until the swelling subsides, either by or without suppuration; but it is very difficult to disperse scrofulous swellings,



attended with much pain and inflammation. I have found the above poultice preferable to any other ; but where the disease is very obstinate, a change is sometimes beneficial, and, besides, a substitute may be necessary. I then apply a poultice, made of the *yellow* or *narrow-leaved dock*, made by bruising or pulverizing the root, simmering it in milk, and then adding a sufficiency of the elm bark to form a poultice, to be applied the same as the one preceding.

## 2d. State of Abscess or Ulcer.

When the swelling or the abscess breaks, or suppuration takes place, our next object will be to bring the ulcer into a healthy state and heal it. As before stated, these ulcers assume a very indolent and inveterate character, and therefore require altogether a different treatment from that usually pursued to cure them. And I am happy in being able to give, what I have found, a sovereign remedy.

We must be governed in our applications, in some degree, by the state of the ulcer. If it be well opened, and no orifice is connected with it, let the following dressings be applied :

1st. Thoroughly cleanse the ulcer with soap, water and spirits, after which, apply to the ulcer a little lint, and over this, the following salve or plaster :

Take *bayberry tallow*, one part ;

*White turpentine*, two parts ;

Mix and melt over a slow fire ; then strain, spread upon a piece of linen, and apply to the ulcer. In some seasons and latitudes, a little sweet oil is necessary to make the plaster of the right consistence. Let this dressing be continued through the day.

During the night use the following poultice :

Take the *bark of the root of bayberry*, (*myrica cerifera*,) a sufficient quantity. Bruise or pulverize ; then add rain or soft water, and simmer until it is soft ; after which stir in sufficient *Indian meal*, to form a poultice, and continue during the night, and it may be used during the day, provided there is any pain or inflammatory symptoms present. The original poultice was directed to be made in this manner. But I find that it is a considerable improvement to substitute the elm bark instead of the Indian meal, as it makes a better poultice.

I have found, by experience, the *bayberry* to be one of the most extraordinary remedies in the scrofula, particularly in a state of ulcer, of any other article, either in the animal, vegetable or mineral kingdom ; and I have thought, if there was a specific, in any complaint, it is this very plant or shrub. I have never yet known it to fail in a single instance, in all my practice, in the most advanced and worst stages of the complaint, and when they have been treated, without any benefit, by our most popular physicians and surgeons.

I have hitherto spoken of scrofula in a state of ulcer. I shall now give directions for the treatment of it, in a state of ulcer connected with a sinus or orifice.

By a close examination, often a small opening will be seen, penetrating deeply into the integuments, or cellular substance, even to the bone, denuding the periosteum, and from this issues either a thin or



thick matter. When such an opening is found or discovered, it should be kept open, and freely discharging, by the use of tents drawn through beeswax or adhesive plaster, and then rolled in the *vegetable caustic*, and introduced as far into the sinus as possible.

In addition to this, the sinus must be injected with a proper sized syringe, morning and night, with a strong *concentrated decoction* of the *bayberry bark*.

The *black salve* may occasionally be substituted for the plaster first mentioned.

When the bone is diseased, which may be ascertained by the grating sensation which is communicated when probed, a few grains of the *vegetable caustic* must be introduced to the bottom of the sinus, and a solution of the same daily injected.

### 3d. State of Tumour or Scirrhus.

This variety or species of scrofula is very frequent. Hard, indolent, inert and indurated tumours appear in the glands of the neck, which often continue a long time very stationary ; at other times they slowly increase. Sometimes they are very painful, at other times they give none at all ; but sooner or later, if they are not dispersed, they degenerate into a malignant and scrofulous ulcer.

In the treatment of these tumours, our first attempt should be to disperse or discuss them, to effect which, apply the following ointment.

Take the *poke* or *skoke root*, finely scraped or pulverized, any quantity. Simmer in *spirits* till the roots are soft ; cover with *fresh butter* or *lard* ; then simmer until the strength is extracted. Strain, and to every four ounces of the ointment, add half an ounce of *Venice turpentine*, and let it be well mixed or incorporated.

Rub the tumour with this ointment, three or four times a day, half an hour each time it is used. Then apply a plaster of the inspissated juice of the *poke-berry*, to be spread on a soft piece of leather, and occasionally renewed. Continue these dressings a sufficient length of time to ascertain whether the tumour decreases, and if so continue them ; but if they are not diminished, but on the contrary grow larger, then use the *discutient ointment* in the same manner, and, after having anointed the parts with it, apply our common *strengthening plaster*. These applications will in general discuss these tumours, even when very large, if aided by proper internal medicine.

I recollect, however, having one case, on the neck of a young lady of this city, of very long standing, so large and so indolent, as not only to baffle the skill of several physicians, but likewise my own. In this case, I made a little roll of adhesive plaster, the thickness of a quill, formed a ring about the size of the tumour, placed it over it, and then covered the inner part, or the part encircled, with the *mineral caustic*, wet with a few drops of water, and over the whole I placed the black plaster. This was suffered to remain on twenty-four hours, which enveloped a considerable portion of the tumour in an eschar. I then applied a poultice made of *yest* and the *elm bark*, which separated the part destroyed, and in this manner removed the scrofulous tumour. The young woman has been well many years.

I am not, however, very partial to this method, as it excites considerable pain, and requires very skilful management. But it is seldom, if ever required, if the means I have recommended be properly applied, and persevered in a suitable length of time.

When all means fail to discuss the tumor, mild dressings must be applied, until there are symptoms of inflammation, or suppuration, and then it must be poulticed as before directed.

### *Constitutional Affection.*

It appears that there is generally a scrofulous diathesis, or state of the system, which may be known by a peculiar haggard and pale countenance, flabby muscles, and small tumours appearing in the glands, in different parts of the body, attended with a considerable degree of debility, with more or less derangement of the digestive organs.

When such symptoms present, give the following decoction :

Take *yellow dock-root* ;

*Bark of the bitter-sweet* ;

Of each a pound ; bruise ; add a sufficient quantity of water, and boil till all the strength is extracted down to two quarts. Strain ; add four pounds of sugar. Then boil a few minutes to form a syrup. Of this, give from half a wineglassful to a wineglassful, three or four times a day, to a child five or six years old.

As a change, give the *alterative syrup* part of the time. Both are exceedingly well calculated to eradicate a scrofulous, or any other taint of the system. In addition to this, the patient should take a *purgative* at least once a week. If any small tumours are perceived, in any part of the body, let the discutient ointment be applied to them three or four times a day.

By pursuing this treatment, I have succeeded in curing the most formidable cases of scrofula on record ; one of which I here represent by the annexed figure.



The subject of the disease was a coloured man, then residing in Trenton, N. J. The swelling and inflammation were prodigious, and several physicians, who were first called, appeared to consider the case entirely hopeless. One of them observed, that whoever cured the disease should be pronounced "King of Doctors." It was first poulticed with the green root of *Indian turnip*, (*arum triphyllum*,) until suppuration followed, with *fifteen* different *apertures*, or orifices, through which the pus or matter discharged. I now injected the *alkaline liquid*, and it issued through every one of them. *Tents* were used to prevent the ulcers from healing; a plaster was kept upon the swelling, and it was in other respects treated in the usual manner. It improved daily, till it healed perfectly sound, leaving but very small scars immediately over the sinuses or apertures.

May not the bayberry (the principal article used in the cure of this complaint) derive some of its medicinal effects from the muriate of soda, which it imbibes from the salt water, near where it grows; or upon some peculiar organization arising from it?

It is somewhat remarkable, that the bayberry should only grow near the seacoast, or salt water; which it is known often exerts some beneficial effect on the patient by bathing with it.

### *Regimen.*

The patient should be confined to a nutritious diet, principally milk. He should bathe once a week in salt water, and, if it is convenient, should live near it, in the country.

## CHAPTER XVIII.

### INFLAMMATION OF THE EYE—(*Ophthalmia.*)

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#### *Description.*

By the term ophthalmia, we understand inflammation, either primary, or symptomatic, of the membranes of the eye, its superficial, or deep-seated parts, muscles, &c. The conjunctiva, the cornea and the iris are very frequently inflamed.

In the commencement of ophthalmia, the inflammation is usually very superficial; but such is the connexion between the different tunics of the eye, that it soon extends to them and all the adjacent parts. It is both *chronic* and *acute*.

#### *Causes.*

The causes producing ophthalmia are, external injuries, such as blows, contusions, and wounds on the eyes; extraneous bodies of an irritating nature, introduced under the eyelids; exposure to bleak winds and cold; little inflammatory tumours, called sties, which rise on the eyelids; various acrid fumes acting as a chemical stimuli, such as the smoke of coal, wood, &c.; too free a use of vinous and spiritous liquors; the suppression of accustomed discharges; the long application of a strong light, or fixed attention to minute objects, and an acrimony prevailing in the mass of blood. To these causes we may, perhaps, add with some propriety the bare inspection of the eyes of a person when in a highly inflamed state; for although practical writers have not enumerated it among the causes of ophthalmia, yet I have occasionally met with cases which appeared to arise from this, as previous to inspecting the diseased eyes the person made not the least complaint, but very soon afterwards complained of uneasiness in his own. Ophthalmia is sometimes symptomatic of other diseases, such as measles, small-pox, scurvy, scrofula and syphilis.

A very obstinate and dangerous species of ophthalmia of the purulent nature is now and then produced by the accidental application of gonorrhœal matter to the eye, or eyes. A distressing case of this nature, says Thomas, wherein the patient, a very stout man, was for ever totally deprived of sight by imprudently washing his eyes with his urine, whilst labouring under gonorrhœa, lately came under my observation.

Mons. Sonnini, in his Travels through Egypt, mentions, that ophthalmia is a complaint which is endemical in that country, and that eyes perfectly sound, or which are not swelled, are rarely to be seen. This he attributes to the excessive heat, the air being impregnated with noxious particles, and the acrid and burning dust which the winds scatter in the atmosphere. Another cause of it, so general at Cairo, he says, is the frequent watering of the streets and houses



Water, thrown abundantly and frequently upon a burning soil, containing a great many saline particles, produces, he observes, acrid vapours, which may be considered as one of the principal causes of blindness in Egypt.

Sir Robert Wilson mentions that the Egyptian ophthalmia is supposed to originate in the nitrous particles emitted from the ground by the force of the sun, which are of a quality so pungent and penetrating as to injure the fine vessels of the eye. The acrid and burning dust flying continually in the atmosphere, irritates still more the already affected part; while the reflection of the soil, the heat of the air and vivid light of the sky, tend to weaken the sight, at last occasioning excessive inflammation.

According to the best information which we have received, this species of ophthalmia arises in the first instance soon after the overflowing of the Nile, or rather on its recession, when a vast quantity of slimy mud is deposited on its banks and other places which were overflowed, and which, being acted upon by a powerful sun, send forth miasma, or effluvia, that excite inflammation in the eyes of this peculiar nature. The custom in Egypt of sleeping in the open air, possibly may increase the power of the cause.

Ophthalmia has not been considered as a contagious disease, although it has often been known to appear as a prevailing epidemic at different times; but it is an undoubted fact, that the Egyptian species is highly contagious. During the campaign in Egypt, the troops were dreadfully afflicted with it, and many returned with a total loss of sight; whilst others, still labouring under the disease, propagated it at Malta and Gibraltar, where they first landed; and from which places it was at length brought into England.

It seems to be established, I think, on the most indisputable evidence, that the Egyptian ophthalmia may be propagated by contagion, and that in this way it has been introduced, and has spread in the same manner as in its native soil. The influence of climate, and other local circumstances, on the general character and progress of the disease, cannot, however, be denied. In most of the instances in which this species of ophthalmia has prevailed in England, it has appeared with mitigated symptoms, in comparison with the disorder as it occurs in Egypt; but it has nevertheless been observed, that where the patients were exposed to the influence of a marshy soil, it equalled in the severity of its symptoms the Egyptian ophthalmia. A modern writer assures us, that its spreading is not owing to contagion in the ordinary sense of the word, (that is, to any infectious matter thrown off from the system of those labouring under the disease, and operating at a greater or less distance from its source,) but to the actual conveyance of the purulent matter from the inflamed organ to the eye of the person in health. Dr. Edmonston has also pointed out, that the sphere of action of this contagion is very limited, and that most of the cases which came under his observation arose from the direct application of virus from diseased to sound eyes.

It has been indeed ascertained as a fact, that many soldiers, with the hope and view of obtaining a discharge from their regiments, ab-

solutely inoculated their eyes with the contagious matter, thereby inducing a loss of sight in one or both.

The late Mr. Ware was of opinion, that the disease which has appeared as a prevailing epidemic among soldiers, ought to be denominated the purulent ophthalmia, instead of the Egyptian ; since one of its chief symptoms, and that which distinguishes it from any other, is the profuse discharge of a purulent coloured fluid, closely resembling the pus or matter that issues from an ulcerated surface. He also thinks that it greatly resembles, in many respects, a disorder, which he has described with minuteness in his *Observations relative to the Eye*, (see vol. i. p. 129. 309.) under the title of the *Purulent Eye of new-born Children*, and in which, no less than in that under consideration, the discharge of matter is always profuse.—(Thomas.)

### *Symptoms.*

The common ophthalmia usually comes on with a sensation as if some gritty particles had insinuated themselves under the eyelids, accompanied with great heat, redness, and pricking darting pains. As it increases, the parts swell, and the vessels of the eye become not only increased in size, and turgid, but appear more numerous than in the natural state. Great pain is excited upon the least motion of the ball of the eye ; the patient cannot bear the light ; and an affusion of tears from the lachrymal gland ensues, which is of so acrid a nature as to excoriate every part on which it happens to fall. When the inflammation runs high, a slight febrile disposition often attends. These appearances, after some days' continuance, gradually abate, and at length entirely cease ; but in some cases, a discharge of thick glutinous matter ensues, which collects in considerable quantities about the angles of the eye, particularly during sleep. Where only one eye has been affected, it is often succeeded by an inflammation of the other, particularly in a scrofulous habit.

In the Egyptian ophthalmia, the symptoms which present themselves are somewhat different from those of common ophthalmia. In the early stage of the former, the conjunctiva is red, swelled and turgid ; the secretion of tears is copious ; the patient complains of excessive pain, and roughness of the ball of his eye, and he cannot bear even a feeble light. The eyelids are red at their edges, and swelled, and there is often a sense of weight and scalding of the eye. Sometimes there is a soreness of the integuments of the forehead and temples, with rigours, a quick hard pulse, headach, and other febrile symptoms. In a very short time, œdematous swelling and tension of the eyelids, and prodigious tumefaction and turgescence of the conjunctiva, with a feeling as if the eye was about to burst out of the head, succeed to the other symptoms. The least ray of light falling on the retina, gives acute pain, and excites in the patient the feeling as if some sharp instrument was thrust into his eye.

In some cases, the under eyelids are turned somewhat outwards ; in others, both eyelids are closed and swollen, and the skin of these parts has an efflorescent shining appearance. It is not unusual to see the eyelids open, and the conjunctiva so swelled and turgid as to pro-

trude from the eye in the form of two or three folds. When the tumefaction of the conjunctiva is not very great, and the eye can be brought fully into view, the cornea sometimes appears pellucid, the pupil is contracted, and the iris discoloured, or, as it were, full of spots.

As the inflammation proceeds, a secretion of purulent like matter takes place from the surface of the conjunctiva and glands of the tarsi. This matter is pent up for some time within the eyelids, in those cases in which the tarsi come in contact; but in others, where they remain separated, it flows from the eye mixed with tears. It is so acrid as to irritate the eye exceedingly, and to excoriate the palpebræ and cheeks in passing over them. In this stage of the disease, the sufferings of the patient are excessive. He is hot and feverish, cannot remain long in one posture or situation, gets no sleep either by night or day, and describes his feelings, as if boiling water was poured into his eyes.

If a sight of the ball of the eye can now be obtained, it is found bathed with the purulent matter; the cornea is muddy in a part or the whole of its extent, or its surface is studded with small white spots. These appearances denote the commencement of a suppuration of the cornea. Sometimes the whole of the cornea is included in the suppuration, and destroyed; the iris is laid bare, the lens and vitreous humour are forced on the iris, or entirely evacuated, and even the form of the eye does not remain. At other times, only a portion of the cornea suppurates, and the sight is more or less affected afterwards, according to the point at which the suppuration has taken place, and the extent to which it has gone. If the abscess be situated before the pupil, and if it penetrate the whole depth of the cornea, the aqueous humour, in escaping, will carry with it a portion of the iris through the aperture in the cornea; and the pupil will be in general totally obliterated by the protrusion of the iris, and its subsequent adhesion to the sides of the ruptured cornea.

During some violent paroxysm of pain, from the excessive increased volume of the whole compages of the eye, locked within the orbit, the coats of the eye at length give way. By this circumstance, the tension in the parts is considerably diminished, the inflammation gradually subsides, and the state of the eye begins to improve, unless in the melancholy instances in which the iris continues to protrude.

Such is the most violent form of the disease; but even in slighter cases, where no rupture of the cornea takes place, on the discharge of pus ceasing, a number of granulations are sometimes perceived to arise, on an inspection of the eye, from the interior of the eyelids, and to present a shocking spectacle.

With some, the Egyptian ophthalmia lasts only nine or ten days: in others, the patients have suffered for months.

The common ophthalmia, when slight and not symptomatic of any other disease, will readily give way to proper means; but if it is very violent, or has continued for any length of time, it is apt to occasion specks, or to terminate in a dimness of sight or opacity of the crystalline lens. In some cases, the inflammation terminates in suppura-



tion of the cornea and deep seated parts. When it arises in a scrofulous habit, or is symptomatic of syphilis, the cure is often tedious.

In the treatment of ophthalmia, its varieties of idiopathic and symptomatic, and of acute and chronic, ought duly to be considered, and to form the basis of our practice. Our object, therefore, should be, to determine with precision, how far each particular case is to be referred to one or other of these kinds, and to adopt our plan accordingly.—(Thomas.)

#### *Common Treatment.*

Bleeding, blistering, mercury, salts, blue vitriol, scarifications, nitrate of silver, &c.

#### *Reformed Practice.*

The *first* indication to be fulfilled in the treatment of ophthalmia, is to remove all extraneous substances from the eye, or whatever may prove a source of irritation.

*Second.* To reduce the inflammation as speedily as possible.

The first indication, viz. that of removing foreign bodies from the eye, is very important; for, so long as they continue, the inflammation will be kept up. Sometimes it continues for months, when something has been found in the eye which has been the source of all the mischief.

The smallest particle, lodging in the eye, from its irritable and delicate structure, produces great pain, swelling, inflammation, and inability to move the lids. There is a preternatural secretion of tears, which often removes the exciting cause. But should not this be the case, the lids should be opened with the fingers, and the patient must rotate the eye in different directions, and the opposite side to that wherein the extraneous body appears to lie; and when the substance is brought in view, it may be readily removed by the end of a probe or bodkin covered with a silk handkerchief of a close texture, or a small roll of fine linen will answer the purpose. If one of the lashes fall into the eye, it may be removed in the same way. If the foreign bodies be very small, either dust or sand, the mucilage of *slippery-elm bark* should be introduced, by directing the person to throw his head as far back as possible, and then pour a quantity of the clear mucilage into the inner corner or canthus of the eye, at the same time that he is directed to wink or move the eye in different directions. The dust or sand will, in this manner, adhere to the mucilage, will be washed out, and the mucilage will also diminish the inflammation, by its soothing and cooling properties.

It is sometimes the case that extraneous particles are insinuated under the lids and adhere to them. In these cases, the lid should be everted, or turned inside out, the particle brought in sight and removed as before directed.

Sometimes particles of metal, or insects, get imbedded into the coat of the eye. A silver wire, beat thin, and fixed into a handle, will be convenient to remove them. A hog's bristle bent, is very good.



Sometimes foreign substances penetrate the conjunctiva, and project a little, causing intolerable pain. They may be removed by a small pair of tweezers.

It is very common in cities, and in factories where much iron is used, for scales, or small pieces of it, or steel, to penetrate into the cornea, and become so imbedded, that they cannot be dislodged without touching them with a sharp instrument.

We very often have persons apply to us in this situation; and it requires some skill to take them out. The method which I adopt, and which is very effectual, is as follows: I seat myself directly before the patient, and direct an assistant to hold his head as steadily as possible. I then press the left forefinger on the upper lid of the eye, and the left thumb upon the lower lid, and extend them sufficiently open to discover the object; and, by the by, the scale is often scarcely perceptible. On one or two occasions, the patient had applied to a physician, who said there was no substance in the eye. But in every case, by looking very closely, a minute dark speck will be seen on the cornea. When, then, the practitioner discovers this, and every thing has been adjusted as mentioned, he will direct the person to look steadily at some object, in that direction which brings the substance fairly into view. At the same time, he will press with his fingers, sufficiently to keep the ball of the eye from turning in any direction, while at the same moment he will, with a common thumb, or abscess lancet, carry the point directly to the particle, or body, and carry it outwards. In this manner it can be easily taken out. Sometimes it will adhere to the point of the lancet; at other times it will fall upon the eye, and is washed out by the tears; and occasionally it is removed without discovering it. After the removal of the body, a minute speck will be seen where it has been imbedded, which is liable to deceive the physician. The only sure criterion to ascertain, whether or not, it has been removed, is the subsidence of the pricking sensation, or the removal of the source of irritation; and this will sometimes take place immediately, at other times not till several hours afterwards.

When it has been in for some length of time, it is difficult, if not impossible, to remove it; and if it cannot be removed, we must wait, and let suppuration follow, when it will be thus separated, and will drop out. During the process, however, means must be adopted to lessen or keep down the inflammation.

When pieces of lime get into the eye, as many as possible must be removed in the same manner as has been directed for the removal of other foreign agents; and such as cannot be thus removed, must be washed out by the mucilage of slippery-elm bark.

In this manner we have succeeded in every case of the kind, and they have been numerous.

After the first indication has been fulfilled, viz. to remove all extraneous bodies from the eye, our next one will be to subdue the inflammation; and the first application to be made, may be locally.

1st. *Fomentations*.—If the pain be very severe, let the eye be fomented with a decoction of poppy leaves. The eye or eyes may be washed with it, and the leaves then be bound on, and often renewed.

2d. *Cooling or Refrigerant Lotions*.—After this fomentation has been

used awhile, the *cooling* or *refrigerant wash* may be applied; which consists of one drachm of pulverized borax, to which has been added eight ounces of boiling rain or spring water, and afterwards strained or filtered. After the eyes have been washed with this, if the inflammation is slight, the use of the *stimulating eye-water* may be sufficient to remove it; and when first used, to be a little diluted.

Should it, however, continue, after the use of this a short time, apply the following wash: make a strong mucilage, by immersing the pith of sassafras in rose water; after which, let the eyes be washed with this frequently.

The above wash is prepared and sold by the physician of the Society of Shakers, at New-Lebanon, in this state; and in many cases is useful.

3d. *Poultices*.—Of all the applications which can be employed to reduce inflammation, there is none so powerful, so strikingly effectual and sovereign, as a poultice made of the *slippery-elm bark*. The *superfine flour* of it should be mixed with equal parts of *milk* and *water*, and applied *tepid*, and next to the skin. It should not be placed between linen, if it can be kept on without. In infants and children, sometimes, however, it is necessary to enclose it, in order to keep it upon the eyes, and when this is *necessary*, it should be made very thin. If the inflammation is very acute, it may be kept on during the day and night, otherwise the washes may be applied during the day, and the *poultice* at night. This does more to remove the pain and inflammation, than any other means besides. There is not the least danger arising from its use, as some, entirely ignorant of its effects, have intimated might be the case; or rather this has been their charge against poultices in general; and, was this, that is here recommended, no better than those usually employed, such charge would be very valid, or properly made; but the bark, applied as here directed, is exceedingly valuable, surpassing every other application, and no injurious effects arises from it in any case.

4th. *Stimulating Eye-water*, or *Wash*. When the inflammation has partially subsided, an eye-water or wash may be applied to the eye, which is a little stimulating to the absorbents. For this purpose, let the *stimulating eye-water* be applied, two or three times a day, to be diluted with a little rain water, and the strength of it gradually increased, as the eyes will bear. If it increases the inflammation, let it be omitted.

5th. *Equalize the Circulation*.—When the pathology of this disease is well understood, (which I am persuaded is not the case in this day,) the method of treating it will be found simple, easy and very effectual. People will not then have their eyes so often destroyed, as at the present time, by improper treatment. When the cause is well understood, the treatment will be necessarily right; and I have found in nine cases out of ten, that ophthalmia of all kinds, arises from an unequal circulation of blood. It recedes in consequences of cold from the surface and extremities, and is thrown in an undue quantity upon the eyes, which, with the morbid agents contained in the circulation, is the great cause of inflammation of these organs. Ask the patient if his feet have not been, and are not

habitually cold, while his head and eyes are hot. He will answer in the affirmative. Or place one hand upon the feet, and the other upon the forehead, and you will discover, that while the former (the feet) are *cold*, the forehead is *hot*, i. e. the temperature, instead of being regular and uniform, is *unequal*, and diametrically opposite. Hence, the indication of cure must be obvious to the meanest capacity, which consists in *recalling*, not *abstracting*, the blood from the eyes and head back again to its original channels, which is no sooner done, than inflammatory symptoms subside; and this is effected by means so simple, that except a practitioner possesses a good share of candour and honesty, combined with discernment, and some physiological knowledge, he will reject it, from errors previously imbibed.

One great and principal means to equalize the circulation, is the application of heat to the surface and extremities. *Diaphoretics* may be given to excite perspiration or a determination to the skin, and the feet should be repeatedly bathed in warm *ley-water*, to return the blood, or to promote a natural warmth and circulation; and it is usually the case, that in the very act of this process, the patient experiences great relief. The temporal arteries cease to beat so violently, the pain in the head subsides, and the irritation of the eyes are lessened.

After the feet are bathed, *mustard plasters* may be applied, and kept on, particularly at night.

The vapour bath may be used to promote general perspiration, in cases where internal medicines prove insufficient, or in cases where it is excited by any difficulty; and perspiration should be aided also by warm diluent drinks. The skin should be kept moist while any inflammation remains.

6th. *Counter-irritants*.—Where pain in the head is very great, and the above means do not afford that relief which is desirable, cups may be applied to the temples and nape of the neck. I have found some benefit from their use, but they are seldom required. I have formerly been in the habit of applying blisters to the nape of the neck in cases of severe ophthalmia, but more recently, I have substituted the mustard plaster, which, thus far, answers a better purpose.

7th. *Diet*.—Diet has a considerable effect in reducing inflammation; and the patient must therefore avoid every thing of a heating or stimulating nature, both in food and liquids, and take only light, cooling, vegetable diet.

8th. *Rest and Quietude*.—The patient should keep in his room as much as possible, as exercise and exposure to the air or cold is apt to increase the inflammation. The room should be a little darkened, and but little, as the act of keeping the eyes entirely from the light will prove injurious, particularly when they first begin to be exposed to it; and they ought gradually to be accustomed to a moderate degree of it.

9. *Anodynes*.—Where the patient is very restless and wakeful, a portion of the *diaphoretic powders* may be given at bedtime.

10. *Purgatives*.—Physic should be given to the patient two or three times a week. It contributes very much to lessen the inflammation, by lessening the quantity of the circulating mass, and by equalizing



the circulation. Our common purgative may be given, and occasionally substituted for *senna*, *manna* and *cream of tartar*. When the eyes adhere much together, from a secretion of matter, which takes place most commonly in the morning, they should be washed off with a little Castile soap and water; and, when they are very irritable, a little milk and water is sufficient. But the soap should be used in this case in preference, if the patient can bear it; and I have found the daily use of it, particularly in purulent ophthalmia, exceedingly beneficial. It not only cleanses the eyes of all viscid secretions, but it gives tone and energy to them, by stimulating the absorbents to a healthy action. An ointment, made by simmering marshmallow, spirits and fresh butter, forms a preparation which will be found very serviceable in ophthalmia, where it assumes a protracted type or character, and may be used with advantage in any stage of the complaint. The patient may take, throughout the stage of the disease, an infusion or decoction of the elder flowers. They are *cooling*, *laxative* and *alterative*.

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### Chronic Ophthalmia.

When acute ophthalmia or inflammation of the eyes has been properly treated, there is very little danger of its running into a chronic form. But when a patient has been freely bled, blistered, mercurialized, and reduced as they now are, chronic inflammation will supervene, or ulceration will follow, which will destroy all vision, or disorganize the eyes, as may be daily seen where such practice has been followed. But when we are called to treat chronic ophthalmia, although we cannot prevent the mischief which has been done, we may remedy it in part, and perhaps wholly. And first, we must make use of the same means to subdue it, as is recommended for the acute stage of the disorder. And if this proves ineffectual, which will seldom be the case, some variation in practice will be called for. Additional, or somewhat different means must be taken to divert the blood from the head, to equalize the circulation, and to excite a healthy action in the eyes.

First, *Emetics*.—Emetics sometimes have an excellent effect where the disease has become stationary, or where chronic inflammation exists. About two a week should be given, and a purgative administered as often. The fact that ophthalmia depends upon gastric irritation, is often overlooked by the practitioner; but should it not depend upon a morbid state of the stomach, the shock given by the emetic to the head and capillary system, exerts a salutary influence on the eyes, by lessening subacute inflammation, and giving tone to them.

Says Abernethy, most of even our local diseases originate in a bad state of the stomach—a truth which cannot be too often impressed upon those who speak of the treatment of purulent ophthalmia. He traces nearly all the maladies which affect the eye to this fertile cause of human suffering, and tells the following amusing story in illustra-



tion of the vulgar errors on the subject : we quote from the report of his lectures in the *Lancet* :—"A lady and gentleman brought their child to me with inflamed eyes; the pupils could hardly be distinguished; there were ulcers on the cornea, and it was very much clouded. They said, 'sir, we are going out of town, and we thought we would ask your opinion of our child's eyes; he has been under the care of several of the most eminent surgeons, and he is getting rather worse than better.' I said, do you expect that I will prescribe an eye-water, or an eye-salve, and so on? I tell you that I am persuaded that the cause of irritable eyes is a disordered state of the stomach and bowels. I desired the lad to put out his tongue, and it was very furred and dirty indeed. I told them that they must pay great attention to the child's diet, to the regulation of his bowels, to take exercise in the open air, and so on. 'Oh!' they said, 'if that was all the advice I could give, they should wish me good morning;' so they paid me a guinea and off they went. They were going into Devonshire, and when they were about seventy miles from the town, the child was seized with a diarrhœa, which caused them to stop on the road, and in a day or two the child's eyes became very much better. They now began to think that there was some truth in what had been told them about a disordered state of the stomach and bowels, and away they came again towards town, after having travelled above seventy miles, to hear something more about this matter, which, if they had had a little patience, they would have heard at first in a few minutes."

*Conjunctival, catarrhal, purulent, gonorrhœal, scrofulous, sclerotic, ititic*, and every species of *ophthalmia*, must be treated on the same general principles. These distinctions are unnecessary for all practical purposes.

I have found that in the chronic, and particularly in the purulent ophthalmia, that the inflammation depends in some degree upon a morbid or vitiated state of the blood; and I have, therefore, administered alteratives, particularly in the purulent and scrofulous, and for this purpose the *alterative syrup* should be freely given.

There is a medicine sold in this city, by physicians and others, particularly for the ophthalmia tarsi, called *Baker's Eye-Balsam*, and prepared by a physician in Pennsylvania. In several cases, I have seen it applied with an excellent effect. A gentleman from that section of the country informs me that it is composed of the following ingredients:

Take one ounce of *olive oil*,  
 One ounce of *lard*,  
 Half an ounce of *white wax*, (cera alba,)  
 Half a drachm of *red precipitate*,  
 Ten grains of *gum camphor*;

Melt the three first articles; then add the precipitate and camphor, finely pulverized. Continue to stir until it is nearly cold. A piece of this ointment, as large as a kernel of wheat or rye, is to be insinuated between the lids of the eye night and morning, with a camel's hair pencil. This may be tried, if the other means recommended should not entirely remove the complaint. The physician who gave me this

formula, was unable to give the proportions of the ingredients contained in it. But I have given them according to the best of my judgment.

If the patient complains of any pain or heat about the eyes and forehead, and which is not easily removed, let him be directed to immerse the crown of his head once or twice successively in spring or rain water which has just been drawn. This will have a tendency to abstract the remaining heat from the parts, by the evaporation which follows, while at the same time it diverts the blood from the head to the other parts, and gives tone and energy to the absorbents. Should the patient feel any worse after this operation, or the use of any other medicine, let it be discontinued ; for it is well known, that a medicine that will cure nineteen persons, will disagree with the twentieth.

Says Dr. Reese, Professor Sewall, of Columbia College, D. C., a distinguished practitioner of Washington city, has obtained extensive reputation by his success in the treatment of ophthalmia, and particularly the purulent form of this disease. By a communication with which he has recently favoured me, I learn, that after a previous course of depletion, which he pursues with great energy, in all cases of ophthalmia, he relies chiefly upon *pressure*, in almost every form of the disease, and especially in the purulent kind. So soon as the active symptoms are subdued by the antiphlogistic regimen, he applies over the eye a pad of silk or soft linen, then a bat of carded cotton, or scraped lint, which he confines by a thin light bandage so tight as to afford gentle and comfortable compression to the eye, so as not to produce pain or uneasiness, however, by its intensity. This compress he removes twice in the twenty-four hours, and replaces it immediately by another of similar material. By this course he thinks he fulfils three indications, viz :

- 1st. Effectually to exclude the light from the eye ;
- 2d. The globe of the eye is prevented from rolling ; and,
- 3d. The distended vessels are compressed and disgorge.

His observation has detected, in most cases of ophthalmia, that there is a portion of the globe of the eye in which the vessels are more turgid than elsewhere, and this is in a line extending from the inner and outer canthus of the eye, and corresponds to the triangular groove formed by the lids when closed ; and arises, as he conceives, from a want of pressure from the lids of the eye.

This practice was, I believe, originally proposed and adopted by Dr. Francis Moore, of Massachusetts, a gentleman of high reputation, both as a physician and surgeon. Professor Sewall, however, has for sixteen years tested its utility, and recommends it to his class with great confidence. From the few trials I have seen of this method, I am inclined to judge favourably of its merits.

During the time he is using compression, a minute quantity of a cerate is introduced into the eye, to which Dr. S. attributes great virtues, in almost every violent form of the disease. It is prepared in the following manner, viz :

Take hydarg. oxyd. rub. grs. xlv. ; lapis calaminaris, grs. xxx. ; cinabar native, grs. xv. ; litharge, grs. xxx. ; axungia porc. oz. j. ; levigate separately, and mix.

This cerate may, of course, be diluted with lard, to adapt it to milder cases of the disease, if it should be thought too active.

Much benefit is derived, in chronic and purulent ophthalmia, from exercise in the open air, from a change of diet and from travelling.

The purulent ophthalmia, it must be remembered, is contagious; and where a member of a family is afflicted with it, great care must be taken that it is not communicated to others, by washing in the same basin, wiping on the same towel, or letting the matter from the eyes be conveyed in any way to any one with whom he associates.

### *Ophthalmia Tarsi.*

This is a troublesome species of ophthalmia, which affects the lids of the eye, and appears to be occasioned by a scrofulous state of the system. It is situated in the sebaceous glands. It is often productive of much inflammation, is very inveterate, and sometimes destroys the eye-lashes.

### *Treatment.*

When there is much inflammation attending this species of ophthalmia, it must be reduced by the means previously recommended. After which, let the affected parts be washed with camphorated spirits, and soon after let the ointment, mentioned under the head of chronic ophthalmia, be applied two or three times a day. If this fail to cure, apply the *marshmallow*, the *discutient* and *celandine ointments*, in succession. Sometimes one will cure, sometimes another.

A person lately applied to me, who came a distance of nearly two hundred miles, to be attended for this complaint. The lids of the eye were four times the thickness that they were in their natural state, and there was a constant corrosive discharge from the eyes, which extensively excoriated the cheeks. She had laboured under the complaint for eight years, and was rendered completely miserable by it. The whole routine of our common treatment only afforded partial relief. The flowers of sulphur, enclosed in a bag, and placed over the eyes at night, she thought, rendered her the greatest service.

After trying every medicine which afforded any prospect of a cure, I was about to abandon the case as incurable. But it occurred to me on my last visit, that one of the preparations, (tincture of capsicum annuum,) which I had before directed her to use, and which she said had aggravated her eyes, might still be beneficial, if used in a weak or diluted state. I accordingly took about a drachm of this stimulating liquid, added to it an ounce of rain water, and directed her to apply it to the eyes two or three times a day. The next time that I saw her, I found a remarkable change for the better. This diluted tincture of *capsicum*, or *cayenne pepper*, checked the discharge, reduced the swelling, inflammation and pain, and, in a word, operated like a charm, and the old lady soon returned home nearly well. Of the *modus operandi*, or the manner in which this article acts, affording relief in such cases, it is not easy to determine. The benefit is probably derived from the new action excited, or from the stimulus given



to the absorbents, which cause them to perform their office, and thus remove the complaint.

In some cases, I have removed all the eye-lashes with a pair of tweezers, but without much benefit. In other cases, I have applied strips of blistering plaster along the edges of the tarsi, or lids, and excited a discharge from them; but these last means have never been attended with much success.

The patient must be directed to take purgatives occasionally, and such medicines as have a tendency to eradicate any taint of the system; and, above all, he should enjoy the benefit of pure air, and every morning the eyes should be well cleansed and washed with good *Castile soap* and water.

We have had, at our institution, a very extensive practice in various diseases of the eye, and for the success of the treatment here laid down, we can appeal to the numerous patients we have attended. We have had cases so severe, that they have been abandoned by other physicians, after having been exceedingly injured by mercury, blistering, scarifications, &c. They have been led to our institution blind, and we have, after a length of time, (for, under the best treatment, such cases are very tedious,) succeeded in restoring them to sight. And, whoever perseveres in this plan of treatment, may safely hold out a prospect of cure to the patient, if vision has not been completely lost, or the eye disorganized by inflammation.

I might here give a vast number of cases in illustration of this practice, but neither time nor space will permit. One case, however, occurs to me, which I will briefly give, more particularly to demonstrate the effects of the present practice of medicine.

A captain Allen, from Lockport, N. Y., residing a distance of 400 miles from this city, applied to me to be treated, with the Egyptian or purulent ophthalmia, which has been endemical in the western states.

The account and treatment which he gave of his disease, was most afflicting and appalling; and illustrates, more strikingly than words or assertions, the lamentable practice of medicine in this day, and as clearly illustrates the superiority of the botanical over the mineral practice. He informed me that when he was first attacked with the disease, his general health was excellent. He was strong and athletic, enjoying the best constitution. He was seized with the usual symptoms of acute ophthalmia, with severe pain, swelling and inflammation in the eyes, with a great discharge from them. He immediately placed himself under the care of a person who was a professed oculist, and who had taken extraordinary pains to acquire all the medical knowledge possible, particularly as relates to the eye.\*

\* He had attended lectures, or received instruction from a certain institution in this city, which claims uncommon skill in treating diseases of the eye, and which has acquired considerable notoriety, but with what propriety, I shall leave the public to decide. But a sense of duty constrains me to state, that I have seen and heard numerous cases which have been exceedingly injured, but I know not of any cures performed, or any benefit derived.

A person who has attended at the place, or infirmary, alluded to, informs me, that scores of *sore eyes* have remained under their treatment for a year or two, without receiving any benefit. Charity does, however, induce me to believe, that they will hereafter substitute an improved system of practice.



This physician began in the usual method, to bleed him most copiously, and he repeated this operation till he was so far reduced that he was confined to his bed. Pint after pint, and quart after quart, was taken from his arm, and from the head, by cupping and leeching.

He was bled twenty or thirty times in the course of two or three months, and during this time, he was purged as freely, by taking several pounds of salts. In addition to this, he was tortured by the repeated and continued application of blisters. Not only so, his whole system, was completely contaminated and poisoned by large portions of mercury. The water or saliva flowed copiously from his mouth, teeth loose, gums swelled, breath horrid, debility excessive, and rapidly sinking. This was not all; as the course did not have the desired effect, he must follow the rule of Doctor Sangrado, and stick to the principles of the book. He now applied the most irritating applications to the eye—he everted the lids, and made incisions in them with his lance, and abstracted more blood from a part already irritated and inflamed.

Again, *blue vitriol* is next applied, and he is further tormented by corrosive applications. He was suffered to eat little or nothing during the whole time, which produced nearly a state of starvation, and his room was rendered a complete dungeon, by excluding all light. As he grew worse under this, two or three other physicians were called in consultation. But, as a matter of course, no change, not a single new idea on the nature or treatment of his complaint. *The principles of the book must be adhered to*, and a similar course of treatment was directed to be continued. The man now was in a most deplorable state; pus or matter streaming from his eyes, totally blind, and an abscess formed on one eye, so extensive as to let out the humours, and to completely disorganize it, and in the other, but a little vision left.

While thus distracted with pain, with the most horrid sufferings, with a constitution broken, ruined, and sinking very rapidly, a thought struck him, for the first time, that the treatment of his physicians was murdering him. He therefore discharged them, and from the *very* time, he began to grow a little better. He gradually let light into the room, and he soon rode out in a carriage, from which he found great benefit. After a while, the acute inflammation ceased, and he was left with a shattered constitution and with blindness.

It was in this state that he was led to our institution; and it would be interesting could I give a representation of this man's eyes. I can only compare them to two bad ulcers, from which matter is constantly issuing, attended with pain, swelling, inflammation and disorganization. Like other cases of ophthalmia, the extremities were cold, and had been, during the whole course of the complaint, while the head was very hot and painful. The digestive functions were exceedingly impaired, great debility, and mind very much depressed. It was in this state that we commenced treating his complaint. He had already asked the opinion of a noted surgeon of this city, who gave him no encouragement, and it appeared to me that little or no benefit could be afforded further than to give temporary relief; but, by pursuing the course already laid down, an improvement was soon manifest. The applications checked the discharge of pus from his

eyes in a very short time : the inflammation and pain began to subside ; the constant heat which he had for such a length of time, was removed ; the warmth returned in the extremities ; the ulcerated state of his eyes was removed, and they assumed their former globular and healthy appearance. The eyelids, that were lined with fungous flesh, and which proved a constant source of irritation, was likewise removed, and in a short time, every symptom grew more and more favourable ; and in the course of three months, although it appeared that all vision was destroyed, he was able to walk the streets alone, and could distinguish the different signs upon the stores ; a circumstance which was almost incredible to all those acquainted with his situation. His general health became good ; he recovered his former plethoric and robust state of the system, and he has ever since transacted business.

For several years, and ever since, he has almost made it a business to give a history of his disease, and the treatment ; and to recommend to us every person labouring under a similar complaint, and for which we feel under particular obligations.

Mr. Coleman, late editor of the *Evening Post*, stated, that for three months he suffered most excruciatingly from the treatment of his physicians for an inflammation of his eyes. He was bled, blistered, cupped, reduced, &c., till he was under the necessity of discontinuing their applications ; when, by the advice of a friend, he washed his eyes with the water in which potatoes were boiled, and he immediately began to recover, and in a short time he was well!! A large library of books could be made of such cases.

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### *Cataract.*

The cataract is an opaque state of the crystalline humour, or of its capsule, by which the rays of light are obstructed in their passage to the retina.

### *Symptoms.*

Imperfect sight or mistiness in vision ; the sensation of motes, particles of dust, flies, or other imaginary objects, floating in the air, or attached to the eye ; the patient seeing better in a weak than in a strong light ; an opacity becomes sensible, and gradually increases, until nearly a total loss of vision is produced ; the crystalline lens gradually changes from a state of transparency, to a perfectly white or gray colour ; in some rare instances it has been black, and also red ; and in appearance resembles a pearl, or other extraneous body of a like colour, situated immediately behind the pupil. The cataract varies in its consistence, being sometimes hard, at others entirely dissolved.

Dr. Bere enumerates the following distinctive appearances :

The hard cataract is equally opaque, has no specks nor spots, is partially detached from the iris, so as frequently to admit of objects

being seen laterally ; the opacity begins in the centre, and slowly spreads ; its colour is gray, or more or less inclining to green.

The black cataract is very liable to be mistaken for amaurosis.

The soft cataract appears streaked or radiated ; the opacity begins uniformly over the whole surface ; the loss of vision is more complete ; it is of a shining white colour, approaches nearer to the iris, and even presses forward into the pupil ; the spots often change their position, and upon opening the cornea, the pupil does not contract.

The connate cataract is almost universally in a dissolved state.

The cataract produced by the opacity of the capsule of the lens, is distinguished by its peculiar shining surface, and by the appearance of silver-like lines, forming radii or stars.

In fluid cataracts, the capsule is also usually opaque.

### *Treatment.*

Electricity, in the form of aura, or weak sparks. Hyoscyamus has been highly extolled.

When any degree of inflammation is present, the same means must be taken to subdue it as is recommended or described under the head of *Ophthalmia*.

Cataract is a disease which is rarely cured. Stimulating applications may be applied externally, and emetics, cathartics and alteratives.

An operation is usually performed for the disease ; but in almost every case it only affords temporary relief, and scarcely even this. Not only so : in most cases it is apt to bring on inflammation, suppuration and disorganization, both to the eye operated upon, and the remaining sound one.

The act of running an instrument into the eye, and wounding it, to cure a disease, seems neither reasonable nor philosophical. I will not, however, take it upon me to say, that the experiment should never be tried ; but I deem it very questionable whether it is ever justifiable ; at any rate, the patient should be apprized of the danger and uncertainty of the operation ; he should be told that if the vision of one eye remains, he will be in danger of losing it by the operation, as well as in danger of losing the natural appearance of the eye, or the eyeball, on which such operation is performed.

He should be told the remarks of a celebrated operator, that he had spoiled a hatful of eyes before he had operated with the least degree of success. He ought, I think, rather to have said, that even after he had ruined a hatful of eyes, he was still unable to *cure* the disease.

Since writing the above, a lady of this city, Mrs. Avery, informs me, that she submitted to two operations for the cataract, the first *depression*, the second *couching*, without deriving the least benefit ; but, on the contrary, it nearly destroyed her life. And they were performed, too, by the physicians of the *New-York* \*\*\*\* \*, who are considered the best acquainted with diseases of the eye. In this case they had the best opportunity of testing the merit of this operation. After depressing it, she states that she was confined to a dark room for the space of thirty-one days ; was fed on mercury (to use her



own expression) and salts every day ; was bled, cupped and leeched, until she was exceedingly reduced. This not proving effectual, in one month after she submitted to the operation of *extraction*, and underwent the same subsequent treatment ; which, with the low diet, nearly destroyed her. Her eye *collapsed*, pain *horrid*, teeth loose and rotten, strength and flesh gone, general health about ruined, and, finally, such debility followed that she was thrown into convulsions.

Now I will not comment upon this tragedy or treatment, but merely ask the reader, if a “botanical physician or medical reformer” should be guilty of such mal-practice, whether he would not be indicted and tried as a criminal ? And yet all this passes current, and as scientific and learned, because it is popular, and sanctioned by custom and great names ! !

Mr. T. Williams, of this city, underwent the most dreadful sufferings, in consequence of an operation performed of the same kind. So exasperating was the pain during the operation, that his shirt was drenched with sweat or perspiration, and after all he was left still blind.

Since writing the above, a gentleman informs me, that a physician in Cincinnati ruined the eyes of his brother by the same operation. Hundreds of other cases of the same nature might be mentioned.

(See *Dr. Lobstein's remedy for cataract*, under the head of *Pharmacy*.)

### *Amaurosis.*

By amaurosis, I mean partial or total loss of vision, arising from paralysis of the optic nerve or retina ; and this is produced by a congestion of the vessels of the part, or minute alteration of its structure.

The persons, subjected to this complaint are those who have been in the habit of viewing minute objects, or exposing the eyes to strong lights ; and those who are affected with amaurosis, are frequently troubled with false appearances, as flashes of light, or balls of fire before their eyes.

The symptoms of this complaint are few, and therefore require to be well known.

The pupil is generally dilated and motionless ; the iris is nearly immovable, and acts very little, and vision is completely destroyed. There is also slight squinting. There is frequently the sensation as if a cloud was before the eye, which is termed *caligo*, and there is often a greenish appearance of the humours, which is named *glaucoma*. This depends on an alteration of the lens, or an alteration in the structure of the vitreous humour.

### *Causes.*

The causes of amaurosis may be divided into three parts ; those which affect the retina or optic nerve ; those affecting the brain, or that part of it from which the optic nerve arises, the *thalami nervorum*



opticorum; and, lastly, those affecting the body at large, or some particular organ, and thus sympathetically affecting the eye.

First: the structure is sometimes altered by disease or violence, laceration from wounds, blows, the changes from inflammation, pressure from the tumours, accumulation of the humours of the eye, paralysis from exhausted sensibility, as by the frequent viewing minute or brilliant objects, too strong light, the use of magnifying or telescopic glasses, or suddenly by a strong transition from darkness to light, as that of the sun, lightning, &c.

Second: the second class of causes consists of affections of the brain; such as plethora, an increased action, a fulness of the vessels of the brain, and from pressure on the brain from tumours, apoplectic effusion, hydrocephalus, injuries to the head, &c.

Third: the third set are those causes, which, operating through the nervous system, depend on some condition of the body at large, or irritation in a distant part. Such are general debility, palsy from lead, irritation in the primæ viæ from disorder of the biliary secretions, or digestive organs generally, worms, &c.

### *Treatment.*

Although the prognosis in this disease is unfavourable, yet we are not to give up all hopes of benefit from treatment. It is, however, especially necessary to distinguish those cases which admit of cure or amendment, and to ascertain in these the causes upon which the affection depends.

In those cases of amaurosis which are accompanied by, or dependent upon inflammation of the organ, the active antiphlogistic or cooling treatment requisite for that condition may relieve the retina. In those cases in which it depends upon plethora, congestion or action of vessels in the brain, the appropriate treatment for such disorder, will suit the amaurosis. In cases where the disorder is in the primæ viæ, the clearing of the stomach and intestines, and the restoring of its healthy secretions, will be the indications. Where the amaurosis depends upon debility, the use of tonics and stimulants will be requisite. In cases which depend upon some paralytic or torpid state of the part, we use stimulants, friction on the eyebrows, stimulating liniments, sternutitious powders, mustard plasters, electricity, and, in some cases, manifest advantage has been derived by emetics and purgatives.

Whatever may be your plans of treatment for this complaint, you will find that there are many cases incapable of cure; many others which are but slightly benefited; and that the cases, most likely to be successful, are those depending upon some obvious and remediable cause, and those only when incipient.—(*Castle.*)

This disease, like cataract, is also extremely difficult to cure. Electricity may be tried, and means made use of to excite a healthy action of the system. Stimulants may be applied to the eyes, and there is nothing better than the diluted tincture of capsicum. The head should be dipped every morning in cold water, and benefit may be derived by bathing the feet, and making an issue behind the ears,

keeping up a constant discharge. In a word, it should be treated on general principles. Emetics, purgatives and sudorifics, tonics and *nervines*, and alteratives, are classes of medicines which should be tried.

### Opacity of the Cornea.

Opacities, or specks of the cornea, may be divided into several kinds or species.

Those which are caused by the altered or more condensed state of the inner lamellar secretion, are called *nebula*; those depending upon the formation of a pseudo-membrane, are more appropriately termed *leucoma*; and the third variety, or that in which the lamella are firmly united with each other, or the conjunctiva, is termed *albugo* or *cicatrix*.

*Nebula*.—Nebula, or simple opacity of the cornea, is recognised by a diffused cloudiness of the whole or part of the cornea; it has no distinct or circumscribed boundary, but gradually loses itself in the transparent part of the tunic.

The opacity appears always greater in its centre, declining steadily towards its circumference. It seldom attacks the deeper lamellæ, but is seated commonly directly beneath the conjunctiva. The obscurity of the cornea is never so great as to conceal the pupil or iris; and the vision, on this account, is never totally destroyed, but only rendered less clear and distinct.

*Leucoma*.—In this kind the opacity is more circumscribed, and of a whitish, chalky, or pearl colour.

If it be deeply seated, it will assume a polished or shining lustre; if more superficial, or beneath the conjunctiva, the colour is more dull. In both cases, there is a considerable degree of nebula surrounding the opacity. Where the disease occupies the centre of the cornea, so as to obstruct the entrance of the rays of light into the pupil, the patient is rendered completely blind. Sometimes one half of the pupil only is obscured, and the patient still enjoys very tolerable sight; the sphere of vision is simply contracted. He will always see better in the twilight, or in an obscure chamber, than in the broad glare of day, because the pupil, being expanded, permits a greater number of rays to enter the retina.

*Albugo*.—This species differs no less in form and colour from the two other varieties, than in the cause which produces it; being always the consequence of a wound or ulcer of the cornea.

Its form is infinitely varied. Not unfrequently the iris will be found united with the cornea at the point of the albugo, so that the pupil is considerably distorted or drawn from its natural position. The cornea is sometimes seen completely studded over with these scars, so that it has lost, in a great measure or altogether, its transparency and convexity.

Opacities or specks of the cornea may always be traced to previous inflammation of this tunic.

Those varieties of ophthalmia, which are connected with some peculiar state of system, are most disposed to terminate in this way. Any accidental or artificial wound of the cornea will cause a nebulous or leucomatous scar. Opacities of the cornea are also often caused by the contact of acrid, or strongly corroding substances with the eye.

### *Treatment.*

The inflammation in these affections is generally of the chronic kind, and arises from a relaxed state of the vessels, which require stimulating applications, in order that they may recover their tone and convey the blood uninterruptedly.

If the vessels be stimulated, the blood will be likely to flow through the veins; the absorbents will be excited, and remove the effused lymph. If there is considerable inflammation, it must be removed by active means.

Care must be taken that, in the treatment, no undue degree of stimulus be employed; if there should be inflammation, it will be increased, and the complaint be as bad as ever.

By stimulating applications, the cornea will frequently be restored to the same transparency as before the attack. A good stimulus, which may be used, is one with the sulphate of zinc, containing about a grain to an ounce of water, gradually increased in strength.—(*Castle.*)

Pure white *ashes*, obtained by burning any hard wood, may be applied to the specks or *opacity* once or twice a day, and a little molasses inserted into the eye as often; both of which are sufficiently stimulating. If inflammation follows, apply a poultice.

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### *Staphyloma.*

Staphyloma is that disease of the eyeball, in which the cornea loses its natural transparency, rises above the level of the eye, and even projects beyond the eyelids, in the form of an elongated, whitish, or pearl-coloured tumour, which is sometimes smooth, sometimes uneven, and, according to Scarpa, attended with total loss of sight.

This disease is justly considered as one of the most serious to which the eyeball is subject; for, to the total and irremediable loss of sight that it occasions, are added all the evils which necessarily result from the bulk and protuberance of the staphyloma. In such circumstances, the continual exposure of the eyeball to the contact of the air, and particles of matter suspended in it, the friction of the eyelashes, the incessant flux of tears down the adjacent cheek, render the eye painful and inflamed; the sound one is affected by sympathy, and the diseased one at length ulcerates, together with the lower eyelid and cheek, on which it presses.

Staphyloma appears to proceed principally from purulent ophthalmia, or the small-pox.

Scarpa observes, that infants are often attacked with this disease soon after their birth, and mostly in consequence of purulent ophthalmia. It is also produced by the small-pox, yet never during its eruption, nor during the stage of suppuration, but when the pustules dry, and even after the detachment of the variolous scabs.

### *Treatment.*

In this complaint, nothing can be done for the restoration of sight; and the only plan of treatment will be to close the eyelid, and make moderate pressure upon it by linen compresses, dipped in cooling lotions or washes.

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### *Pterygium, or Excrescence.*

This is a membranous excrescence, often found upon the white part of the eye, which frequently spreads over the cornea, so as entirely to destroy vision. It is sometimes attended with great pain, and has terminated in cancer.

### *Causes.*

External injury; inflammation; scrofula; lues venerea.

### *Treatment.*

The careful application of stimulating agents, as directed against specks in the eye, and mild caustic.

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### *Abscess.*

A collection of matter in the eye in consequence of ophthalmic inflammation. This must necessarily take place betwixt one or other of the coats of the eye, varying in its quantity and extent in different cases. Often, when deep seated, a purulent matter is apt to be formed in some of the chambers of the eye, which kind of abscess is called *Hypopion*, when the ball becomes enlarged, the humours disturbed, and neither the iris, pupil, nor lens, can be distinguished. The external appearance of the ball becomes altered, irregular, and full of protuberances. While the disease is forming, besides the loss of sight, the patient feels great distress in the eye and head, and the usual symptoms of fever. The deposition is discharged, either naturally, or by the assistance of art.

An abscess lodged in the substance of the coats of the eye is not an unfrequent consequence of small-pox: it is also sometimes produced by external injury.



*Treatment.*

The collected matter should be evacuated by an incision made into the eye, in the most prominent part of the tumor, or it may be allowed to break spontaneously. Inflammation is afterwards to be obviated by the most rigid antiphlogistic regimen, and by the means recommended for the treatment of ophthalmia.

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*Ulcer.*

Ulcers on the eye arise from the same causes which produce ulcers on other parts of the body, as accidental injury, wounds, burns, &c. They may also be the consequence of a general affection of the constitution; as, lues venerea, scrofula, &c. They are more immediately produced by inflammation.

*Treatment.*

If inflammation be present, this should first be removed by appropriate means; after which their management must be nearly the same as that of similar affections in other parts. See *Inflammation*.

If healing proceed slowly, astringents and tonics, in the form of solution or ointment.

If there be great attendant pain, opium, or the poppy fomentation.

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*Fungus.*

Fungous excrescences, sometimes considered as a cancer of the eye, are apt to form as a consequence of both the preceding diseases. In some rare instances, also, excrescences of a fungous nature are found to be connected with the interior parts of the eye, and to become so prominent as even to rest upon the cheek.

*Treatment.*

When small in size, gentle escharotics.

When large, the ligature may be tried.

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*Hordeolum, or True Stye.*

This is a small abscess, seated in the edge of the eyelid, and produced by an obstruction in one of its sebaceous glands. It is attended with heat, stiffness, pain, and considerable irritability.

*Treatment.*

A small emollient poultice ;—an opening made with the point of a lancet, and afterwards the application of a cooling ointment.

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*Steatomatous Tumours and Warts.*

Small encysted tumours and warts are apt to form about the eyelids, and occasion much inconvenience and deformity.

*Treatment.*

*Warts* may be removed by ligature, or caustic, guarding against subsequent inflammation by refrigerant lotions, or small emollient cataplasms.

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*Trichiasis, or Inversion of the Cilia.*

In this disease the eyelashes are so much inverted as to rub upon the eye, and produce much pain and inflammation.

*Causes.*

The hairs themselves taking a wrong direction ; inversion of the tarsus ; cicatrix of this part in consequence of a wound, or ulcer ; tumours pressing the hairs in upon the eye ; a relaxation of the external integuments.

*Treatment.*

Extraction of the eyelashes. If inflammation be present, the local applications recommended for ophthalmia. When arising from the presence of tumours, the removal of these.

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*Retortion of the Eyelids, or Gaping Eye.*

This consists in a large portion of the eyelid being turned outwards ; by which too much of the eye is exposed.

*Causes.*

Dropsical swellings of the eye ; cicatrix from sores, produced by inflammation, variola, syphilis, scrofula, &c. ; laxity of the part in old age.

*Treatment.*

If the disease proceed from the first of the causes above enumerated, recourse is to be had to the treatment afterwards to be mentioned. If from debility, or laxity, cold and astringent applications.

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*Concretion of the Eyelids.*

This is mostly the consequence of a high degree of ophthalmia. A cohesion may either take place betwixt the lids themselves, or the lids may form adhesions to the surface of the eyeball.

*Treatment.*

When slight, the adhesion may be removed by the end of a blunt probe, passed between the lids. When more considerable, a cautious division will be necessary. A few drops of bland oil should afterwards be applied to the eye, and every precaution taken to prevent the accession of inflammation and irritation.

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*Dropsy of the Eye*

Consists in a preternatural accumulation of the aqueous humour. It is attended by a sense of fulness in the eyeball;—the motions of the eyelids, by degrees, become impeded;—vision gradually becomes more and more imperfect, till at last the patient can only distinguish light from darkness. The ball of the eye becomes gradually enlarged; the cornea begins to protrude, and, if suffered to proceed, at length bursts, and the fluid is discharged.

*Treatment.*

Constant fomentations and steaming the eye with bitter herbs, and giving purgatives and alteratives. If this fail, a puncture or incision made at the under edge of the cornea, into the anterior chamber of the eye, or through the sclerotic coat, into the posterior, of sufficient extent to admit of the evacuation of the fluid.

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*Protrusion of the Eye.*

A protrusion of the eyeball beyond its socket is not an unfrequent effect of external violence;—it may also be produced by tumours forming behind it, by a dropsical swelling.

*Treatment.*

When the consequence of external injury, if the eyeball be not entirely separated from the neighbouring parts, it should be carefully freed from extraneous matter, and returned to its situation; when the faculty of sight will often be recovered, should the optic nerve remain uninjured. When it arises from collections within the eye itself, these are to be evacuated.—See *Dropsy* and *Abscess*. Other causes are to be removed by the means proper for each.



## CHAPTER XIX.

### LOCKED-JAW—(*Tctanus.*)

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TETANUS is defined by all authors to be a more or less violent and extensive contraction of the muscles of voluntary motion, attended with tension and rigidity of the parts affected.

The excessive contraction of the muscles is kept up without any intervals of complete relaxation; in which respect the disorder differs from ordinary spasms and convulsions, where the contractions and relaxations alternate in rapid succession. In tetanus, the powers of sensation and intellect also remain unimpaired, in which particularity it forms a contrast to epilepsy.—(*Rees' Cyclopædia*, art. *Tctanus.*)

When its effects are confined to the muscles of the jaw or throat, it is called *trismus* or *locked-jaw*; when all the body is affected and becomes rigid, but retains its ordinary straightness, the case is named *tetanus*. When the body is bent forwards, the disease is termed *emprosthotonos*; and *opisthotonos*, when the muscles of the back are principally affected.

To these four forms some writers have added a fifth, which they denominate *pleurosthotonos*, and which is characterized by the body being drawn to one side. It is the *tetanus lateralis* of Sauvages.

The different terms which are applied to tetanic affections do not imply so many particular diseases; but only the seat and various degrees of one and the same complaint.

A far more important division of tetanus is into the *acute* and *chronic*, according to its greater or less intensity. The first is exceedingly dangerous, and usually fatal; while the latter, on account of the more gradual progress of the symptoms, affords more opportunity of being successfully treated,—(*Larrey, in Mém. de Chirurgie Militaire*, t. i. p. 235, 236.)

Tetanus may also be distinguished into the *traumatic*, or that arising from wounds, being the case with which surgeons have principally to deal; and into the *idiopathic*, or that proceeding from a variety of other causes.

*Traumatic* tetanus sometimes comes on in a surprisingly sudden manner, and quickly attains its most violent degree. The most rapidly fatal case that has ever been recorded, is one that we have on the authority of the late Professor Robison, of Edinburgh. It occurred in a negro, who scratched his thumb with a broken china plate, and died of tetanus a quarter of an hour after this slight injury.—(See *Rees' Cyclopædia*, art. *Tetanus.*) But commonly the approaches of the disorder are more gradual, and it slowly advances to its worst stage. In this sort of case the commencement of the disorder is announced by a sensation of stiffness about the neck; a symptom which, increasing by degrees, renders the motion of the head difficult and

painful. In proportion as the rigidity of the neck becomes greater, the patient experiences about the root of the tongue an uneasiness which soon changes into a difficulty of mastication and swallowing, which after a time become totally impossible. The attempt at deglutition is attended with convulsive efforts, especially when an endeavour is made to swallow liquids; and so great is the distress which accompanies these convulsions, that the patient becomes very reluctant to renew the trials, and refuses all nourishment. Sometimes it even inspires him with a dread of the sight of water, and a great resemblance to hydrophobia is produced.

One of the next remarkable symptoms is a very severe pain at the bottom of the sternum, darting from this point backwards to the spine, in the direction of the diaphragm. As soon as this pain commences, the spasms of all the muscles about the neck become exceedingly violent, and the head is drawn backwards or forwards, according as the contraction of the extensor or flexor muscles happens to be strongest; but, in the majority of cases, the head and trunk are curved backwards, (*Boyer, Traité des Mal. Chir. t. i. p. 288.*) and the contractions increasing in force, the body is frequently raised in the form of a bow, resting upon the head and feet alone; a state which is more particularly denominated *opisthotonos*.—(See *Rees' Cyclopædia*, art. *Tetanus*.) At the same time the muscles which close the lower jaw, and which were affected with spasm and rigidity in the very beginning of the disorder, now contract with great power, so as to maintain the lower jaw-bone inseparably applied to the upper one. The last state, which has been considered as a particular affection under the name of *trismus*, or the *locked-jaw*, Boyer conceives, may be regarded as the pathognomonic symptom of tetanus, which in many instances is limited to such an affection of the jaw.

The muscles affected in tetanic cases are never altogether relaxed as long as the disease continues; but still they become more violently contracted in the frequent paroxysms of spasm, which always attend the complaint, and increase as it advances.

The continuance of the disease is marked by the increasing spasm of the diaphragm, which now returns every ten or fifteen minutes, and is instantly succeeded by a stronger retraction of the head and rigidity of the muscles of the back, and even of those of the lower extremities. The abdominal muscles are also strongly contracted, so that the belly feels as hard and tense as a board. By the violence of the contractions, indeed, the recti muscles have been known to be lacerated. Sometimes the spasm and tension extend only to the muscles on one particular side of the body.

When the disease reaches its most violent stage, the flexor muscles of the head and trunk contract so powerfully, that they counterbalance the force of the extensors, and hold those parts in a straight, fixed, immovable position. This is the condition to which the appellation of *tetanus* more particularly belongs. The muscles of the lower extremities become rigid; and even the arms, which till now were little affected, also partake of the general spasm and stiffness, with the exception of the fingers, which often retain their movableness to the last. The tongue likewise continues a long while endued

with the power of voluntary motion ; but at length the violent spasms do not leave it unaffected, and it is then liable to be forcibly propelled between the teeth, where it is sometimes dreadfully lacerated.

In the extreme period of the disorder, all the muscles destined for voluntary motion are affected ; among others those of the face : the forehead is drawn up into furrows ; the eyes, sometimes distorted, are generally fixed and motionless in their sockets ; the nose is drawn up ; and the cheeks are retracted towards the ears ; so that the features undergo a most extraordinary change. When tetanus arrives at this stage, and the spasms are universal, a violent convulsion usually puts an end to the patient's misery.

Wherever the muscular contractions are situated in cases of tetanus, they are always accompanied with the most excruciating pain. They sometimes last, without any manifest remission, to the end of the disorder ; but in almost all cases, their violence, and the sufferings excited by them, undergo periodical diminutions every minute or two. The relaxation, however, is never such as to let the muscles which experience it yield to the action of their antagonists ; and it is in nearly all cases followed in ten or twelve minutes by a renewal of the previous contractions and suffering. The recurrence of these aggravated spasms frequently happens without any evident cause ; but it is often determined by efforts which the patient makes to change his posture, swallow, speak, &c.

As Dr. Cullen observes, the attacks of this disease are seldom attended with any fever. When the spasms are general and violent, the pulse is contracted, hurried, and irregular, and the respiration is affected in like manner ; but during the remission both the pulse and the respiration usually return to their natural state. The heat of the body is commonly not increased ; frequently the face is pale, with a cold sweat upon it ; and very often the extremities are cold, with a cold sweat over the whole body. When, however, the spasms are frequent and violent, the pulse is sometimes more full and frequent than natural ; the face is flushed, and a warm sweat is forced out over the whole body.

“ Although fever be not a constant attendant of this disease, especially when arising from a lesion of nerves ; yet, in those cases proceeding from cold, a fever sometimes has supervened, and is said to have been attended with inflammatory symptoms. Blood has often been drawn in this disease ; but it never exhibits any inflammatory crust ; and all accounts seem to agree, that the blood drawn seems to be of a looser texture than ordinary, and that it does not coagulate in the usual manner.

“ In this disease the head is seldom affected with delirium or even confusion of thought, till the last stage of it ; when, by the repeated shocks of a violent distemper, every function of the system is greatly disordered.

“ It is no less extraordinary, that in this violent disease, the natural functions are not either immediately or considerably affected. Vomittings sometimes appear early in the disease, but commonly they are not continued ; and it is usual enough for the appetite of hunger to remain through the whole course of the disease ; and what food hap-



pens to be taken down seems to be regularly enough digested. The excretions are sometimes affected, but not always. The urine is sometimes suppressed, or is voided with difficulty and pain. The belly is costive; but, as we have hardly any accounts, excepting of those cases in which opiates have been largely employed, it is uncertain whether the costiveness has been the effect of the opiates or of the disease. In several instances of this disease, a miliary eruption has appeared upon the skin; but whether this be a symptom of the disease, or the effect of a certain treatment of it, is undetermined. In the mean while, it has not been observed to denote either safety or danger, or to have any effect in changing the course of the distemper.”—(*First Lines of Physic*, vol. iii.)

According to Baron Larrey, the opisthotonos is not so often observed in Egypt as the emprosthotonos; and the experience of this gentleman taught him that the former was the most rapidly fatal. We must not adopt, however, his curious opinion, that the violent extension of the vertebræ of the neck, and the manner in which the head is thrown back, cause strong compression of the spinal marrow, and a permanent contraction of the larynx and pharynx, (*Mém. de Chirurgie Militaire*, t. i. p. 240.) since this sort of compression, if it did not at once destroy the patient, would at any rate paralyze most of the muscles, and instantly stop their extraordinary contraction.

This experienced writer notices how much the nerves of the neck and throat seem generally to be affected on the invasion of this disease. The consequent contraction of the muscles of these parts, he says, is soon attended with difficulty of deglutition and respiration. The patients then experience, if not a dread of liquids, at least a great aversion to them, which often prevents the administration of internal remedies; and if the wound is out of reach of the interference of art, the patient is doomed to undergo the train of sufferings attendant on this cruel and terrible disorder. Nothing can surmount the obstacles which present themselves in the œsophagus. The introduction of an elastic gum catheter into this canal, through the nostrils, is followed by convulsions and suffocation. “I have tried this means (says Larrey) on the person of M. Navailh, a surgeon of the second class, who died of a locked-jaw, brought on by a wound of the face, accompanied with a comminuted fracture of the bones of the nose, and part of the left orbit.

“In the examination of the bodies of persons dead of tetanus, I have found the pharynx and œsophagus much contracted, and their internal membrane red, inflamed, and covered with a viscid reddish mucus.

“Hydrophobia, hysteria, and several other nervous diseases, likewise produce their chief effects upon these organs, and the result appears to be the same. So I have just remarked, when tetanus is arrived at its worst degree, the patients have a great aversion to liquids; and if they are forced to swallow them, immediate convulsions are excited. This circumstance was particularly observed in M. Navailh.”—(*Mém. de Chirurgie Militaire*, t. i. p. 247, 248.)

Sometimes tetanic affections deviate from their ordinary course and nature. The most singular of these anomalies is recorded by



Sir Gilbert Blane : it is a case in which tetanus prevailed to a very considerable extent, without any degree of pain. The spasms were accompanied with a tingling sensation, which was even rather agreeable than distressing. The case, however, terminated fatally ; but, to the last, no pain was experienced. In two examples mentioned by the same author, the spasms affected only the side of the body in which the wound was situated.

The dissection of patients who have died of tetanus, has thrown no light upon the nature of this fatal disorder. Sometimes slight effusions are found within the cranium ; but in general, no morbid appearance whatever can be detected in the head. There is always more or less of an inflammatory appearance in the œsophagus and in the villous coat of the stomach about the cardia. But those who are conversant with dissections, must be well aware that these appearances are common to a great number of diseases, and are uniformly met with in every case of rapid or violent death. Besides the redness and increased vascularity of these parts, Baron Larrey, as I have already stated, found the pharynx and œsophagus much contracted, and covered with a viscid reddish mucus. He also found numerous lumbrici in the bowels of the several patients who died.—(See *Mém. de Chir. Militaire*, t. iii. p. 287.) This, however, could only be an accidental complication, and not a cause. In several cases, Dr. M'Arthur found the intestines much inflamed ; and in two of them a yellow waxy fluid, of a peculiar offensive smell, covered their internal surface ; but whether the inflammation was primary, or only a consequence of the pressure of the abdominal muscles, which contract so violently in this disease, he is unable to decide.—(See *Med. Chir. Trans.* vol. vii. p. 475. ; and *Rees' Cyclopædia*, art. *Tetanus*.)

Dr. Lionel Chalmers, of Charleston, South Carolina, states, that when the disease forms very quickly, and invades the unfortunate person with the whole train of its mischievous symptoms in a few hours, the danger is proportioned to the rapidity of the attack, and that the patients thus seized, generally die in twenty-four, thirty-six, or forty-eight hours, and very rarely survive the third day. But when the disease is less acute, few are lost after the ninth or eleventh.—(See *Med. Obs. and Inq.* vol. i. p. 92, 93.)

From the valuable report of Sir James M'Gregor, it appears that several hundred cases of tetanus occurred in our army during the late campaigns in Spain and Portugal. The disease was observed to come on at uncertain periods after the receipt of the local injury ; but it terminated on the second, third and fourth days, and even as late as the seventeenth and twentieth day ; though it was usually not protracted beyond the eighth.—(*Med. Chir. Trans.* vol. vi. p. 353.) A patient, however, lingered in the military hospital at Oudenbosch five weeks with chronic tetanus, before he died. This happened in the year 1814, soon after the assault on Bergen-op-Zoom, where the patient had been wounded, and suffered amputation of the thigh.

Although tetanus is a disease which has been observed in almost all parts of the world, experience proves that its frequency is much the greatest in warm climates, and especially in the hot seasons of those

climates. It is also more common in marshy situations and countries bordering upon the sea, than in places which are very dry, elevated, and at a distance from the seacoast. Every class of individuals is exposed to its attack; but infants, a few days after their birth, and middle-aged persons, are said to be oftener affected than older subjects or others in the youthful period of life. The male sex more frequently suffer than the female; and the robust and vigorous more frequently than the weak.

According to Dr. Cullen and other medical writers, the causes of tetanus are cold and moisture, applied to the body while it is very warm, and especially the sudden vicissitudes of heat and cold. Or the disease is produced by punctures, lacerations or other injuries. Cullen admits, however, that there are probably some other causes, which are not distinctly known.

Baron Larrey observed, that gun-shot wounds in the course of the nerves, and injuries of the joints, often produced tetanus in the climate of Egypt, particularly when the weather or temperature passed from one extreme to the other, in damp situations, and in those which were adjacent to the Nile or the sea. What he terms dry and irritable temperaments, were the most subject to the disorder, the event of which was found to be almost always fatal.—(*Larrey*, op. et loc. cit.)

Traumatic tetanus is remarked to proceed oftener from wounds of the extremities, than from similar injuries of the trunk, head and neck. Sometimes it originates at the moment of the accident, as in the instance mentioned by the late Professor Robison, of Edinburgh; but in general it does not come on till several days afterward, sometimes not till the wound is nearly or perfectly healed, and free from all pain and uneasiness. Wounds of every description may give rise to tetanus, and in warm climates very trivial injuries produce it. Thus, in Egypt, Larrey had one case which proceeded from the lodgement of a small piece of fish-bone in one of the sinuses of the fauces.—(*Mém. de Chir. Militaire*, t. i. p. 254.) In colder regions, traumatic tetanus seldom happens, except from contused, punctured or lacerated wounds; or wounds of the ginglymoid joints, with laceration of the tendons and ligaments; compound fractures or dislocations; deep pricks in the sole of the foot; and especially lacerations or ulcerations of the fingers and toes. A partial division of a nerve has been suspected as a cause; but as some nerves must be imperfectly cut through in almost every wound, and yet tetanus does not arise, the reality of this cause is doubtful. Besides, if it were true, the cure would be easily effected, by making the division of the nerve complete, which experience contradicts. Baron Larrey, however, has recorded a fact which favours the opinion, as I shall presently notice; and a case in which the branch of the median nerve going to the thumb was found partly torn through, and its extremity inflamed and thickened, has been related by Mr. Liston.—(*Ed. Med. and Surg. Journ.*, No. 79. p. 292.) The inclusion of the nerves in ligatures applied to arteries, is another alleged cause of tetanus; but as this fault is very common, and tetanus rather rare in this country, while it may follow all sorts of wounds, whether from accidents or operations, the accuracy of this opinion may also be doubted. In support of it, however, there are

some cases and observations adduced by Larrey, which will be quoted in the sequel of this article.—(See t. iii. of his *Mém. de Chir. Militaire*.) At the same time, I do not mean to hint that the nerves are not sometimes tied in tetanic cases, or that the practice is not on every account blameable. Amputation and castration are the only great surgical operations to which I have seen tetanus succeed ; though it may follow the employment of the knife on less severe occasions. In St. Bartholomew's hospital, it once followed the operation of removing the breast.

In warm countries, tetanus is an ordinary consequence of all kinds of wounds.

There cannot be a doubt that difference of climate makes considerable difference in the degree and danger of tetanus. Larrey found that in Egypt the disease was more intense, and bore a greater resemblance to hydrophobia, than in the colder climate of Germany. In both these countries he remarked that, when the wounds causing tetanus injured nerves situated on the fore part of the body, emprosthotonos was occasioned ; that if the posterior nerves were hurt, opisthotonos followed ; and that when the wound extended quite through a limb, so as to injure equally both descriptions of nerves, complete tetanus ensued. He noticed, also, that the disease commonly arose from wounds when the seasons and temperature passed from one extreme to another. Exposure to the cold, damp nocturnal air, he found particularly conducive to it.—(See *Mém. de Chir. Militaire*, t. iii. p. 286.)

In the late campaigns in Spain and Portugal, according to the report of Sir James M'Gregor, tetanus occurred in every description, and in every stage of wounds, from the slightest to the most formidable : it followed the healthy and the sloughing ; the incised and the lacerated ; the most simple and the most complicated. It occurred at uncertain periods ; but it was remarked that if it did not commence before twenty-two days from the date of the wound, the patient was safe.—(See *Med. Chir. Trans.* vol. vi. p. 453.) In Egypt, as we learn from Larrey, the latest period of the commencement of tetanus after a wound, was from the fifth to the fifteenth day.—(*Mém. de Chir. Militaire*, t. i. p. 263.)

It is observed by Dr. Dickson, that as the acute form of tetanus is so uniformly fatal, it is of the greatest consequence to attend to whatever may assist in detecting the disease early, or in warding it off. Richerand states, that in wounds threatening convulsions and tetanus, a persevering extension of the limbs during sleep often manifests itself before any affection of the lower jaw ; and we should naturally pay more attention to any admonition of this kind in punctured or extensive lacerated wounds, particularly of tendinous or ligamentous parts, and especially in injuries of the feet, hands, knee-joint, back, &c. Some prelusive indications of danger may often be derived from the increase of pain, irritation, restlessness, nervous twitching, pain and difficulty in deglutition, or in turning the head ; spasms or partial rigidity of some of the voluntary muscles ; pain at the scrobiculis cordis ; a suppressed or vitiated state of the discharge, &c., which mark the slower approaches of the disease. Larrey adduces several instances of tetanus, in which the wound was either dry, or afforded



## Locked-Jaw—(Tetanus.)

only a scanty serous exudation, and where the symptoms were relieved on suppuration being re-established; and Dr. Reid (*Edin. Med. and Surg. Journ. for July, 1815.*) remarks, that on removing the dressing, the wound was covered with a darkish unhealthy-looking matter, and that he had seen this change the forerunner of tetanus in two other instances. A torpor of the intestines has generally been observed to precede as well as accompany the disease; and Boyer, in particular, enumerates an obstinate constipation among the predisposing causes. (*Traité des Mal. Chir. t. i. p. 287.*) Mr. Abernethy also informs us, that in four cases where he inquired into the state of the bowels, the evacuations were not like *scæces*; and he proposes as a question, in investigating the cause, what is the state of the bowels between the infliction of the injury and the appearance of this dreadful malady? (*Abernethy's Surgical Works, vol. i. p. 104.*) Dr. Parry thinks the velocity of the circulation a useful criterion of the danger of the disease, and observes, that if the pulse be not above 100 or 110, by the fourth or fifth day, the patient almost always recovers; but that if it be quickened early, the disease mostly proves fatal; and yet there are a few instances of recovery where the pulse has risen to 120 on the first day. Baron Larrey remarks, that when the perspiration which so often attends the disease is symptomatic, it begins upon the head and extremities; but that when it is critical, it occurs over the chest and the abdomen.—(*Mémoires des Chir. Militaire, t. i. p. 256.*) It must be confessed, however, that in many cases perspiration flows very freely, without bringing relief.—(*Rees' Cyclopædia, art. Tetanus.*)

Says Samuel B. Cooper, the treatment of tetanus is a subject of infinite difficulty, because the disease frequently baffles every mode of practice, and, in certain instances, gets well under the employment of the very same remedies which decidedly fail in other similar cases of the disorder. Every plan has occasionally succeeded, and every plan has still more frequently miscarried. The great difficulty, therefore, is to ascertain, among numerous discordant accounts, what practice is found on the whole to be attended with the least ill-success? For, in the present state of our knowledge, the most credulous practitioner will not flatter himself with the supposition, that any effectual remedy for tetanus has yet been discovered.

### Treatment.

There is no disease which is treated with such a variety of medicines as the lock-jaw. There are as many different applications as there are physicians, none of which seem to have much effect.

When the tetanus proceeds from a wound, as is very apt to be the case, the chief attention should be directed to such wound. It will be usually found, that an unhealthy or an ill-conditioned state of it, is the exciting cause of the disease. There is either no discharge, or it consists in an unhealthy or a sanious matter. Hence the importance of applying such agents as will bring about a healthy state of it. If the situation will admit, the parts should be fomented or steamed over *bitter herbs*, after which, should be bathed or held in hot ley. A captain of a vessel, in one of the eastern states, was cured of a



severe attack of the lock-jaw, by bathing it in ley as hot as could be borne.

When it has been thus bathed, let a poultice be applied, made of *slippery-elm bark* stirred in the ley, and applied warm; and let it be often thus steamed and poulticed. To the wound itself, let the vegetable caustic be applied whenever it is dressed, and as a substitute the carbonate of potash may be used. It is not, however, so powerful.

When the muscles become stiff, rigid and contracted, let the patient be thoroughly sweated, by means of the *vapour bath*, made by putting a strong decoction of bitter herbs into a small tub, and placing the patient over, with the blanket around to retain the steam. At the same time let him drink a tea or infusion of catnip. After this he should be put to bed, and covered warm, in order to keep up a perspiration. If the symptoms of the complaint continue afterwards, if there be spasms, rigidity, affection of the throat and jaws, give the patient a tablespoonful of the tincture of lobelia, diluted with any kind of tea, every twenty minutes, until it operates as an emetic.

When the jaws have been so closed that no medicine could be introduced, I have known this to cause an immediate relaxation of the muscles and open them. If symptoms are very severe, a teaspoonful of the tincture of capsicum may be added, with the tincture of lobelia. If these medicines do not control the disease, or if the patient does not receive essential benefit from their exhibition, administer the *black drop*. When the case be very urgent, a teaspoonful may be given, but the physician should be governed by the violence of the symptoms. If called to a case where there is any difficulty of administering any kind of medicine, injections, or clysters should be administered, made with a strong decoction of lobelia, mixed with half its quantity of milk, and sweetened with molasses, into which a little sweet oil has been added. To each injection, from half an ounce to an ounce of laudanum may be added. It will not be requisite to use this, unless the other means fail.

In concluding this chapter, I will insert the remarks of Dr. Reece upon tetanus. He says,

“Perhaps there is no disease which has been treated by so great a variety, and even contrariety of remedies, as *tetanus*. There are in America very many surgeons who pursue the stimulating plan of Dr. Rush; among these is Professor Hosack, who relies upon Madeira wine: while there are many others who adopt the opposite theory, and not only bleed unsparingly, but combine the whole antiphlogistic battery; and instances of their success are reported, quite as numerous as those of the opposite theory and practice. The liberal use of mercury, in large and oft-repeated doses, has found many advocates, and many cures have been reported in which this was the only agent employed.

“Of late, however, the treatment of this disease, in this country, has very much changed, and extensive vesication, especially on the region of the spine, seems to be very generally relied on, and with singular success. One of the most severe cases of tetanus I ever witnessed, arose from a gun-shot wound, a load of shot having entered the back and penetrated into the dorsal and lumbar vertebræ. The disease

speedily assumed the form of opisthotonos, and was treated by the application of the caustic potash to the spine, from the cervical vertebræ to the sacrum. About an inch in width of the skin was destroyed all the way down, and the only internal medicines relied upon were, prussic acid in large doses, and elaterium as a carthatic. This case, and its successful issue, was reported in the Medical Recorder for 1825. The prussic acid was given at the suggestion of my friend Professor Pattison, now of the London University, who informed me that he had seen it of great value in the treatment of every form of tetanus. I was inclined to attribute the removal of the disease to the effect of the caustic application, as the irritation and eschar were considerable, and relief almost immediate. Similar results are reported as having followed extensive blistering with cantharides along the course of the spinal marrow, and this practice is now becoming very general in America."

## CHAPTER XX.

### CARBUNCLE—(*Anthrax.*)

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#### *Description.*

A DEEPLY seated, hard, immovable, and distinctly circumscribed tumour, generally appearing in the posterior parts of the body, and most frequently attacking people above the middle age, and luxurious livers. About its centre it is of a dusky red, purple or livid colour, but is much paler, and often variegated towards its circumference. There is often an extensive areola of a brownish hue. It is accompanied with an intensely painful sense of burning; small purulent vesications or pustules appear, which, when ruptured, evacuate a dark coloured sanies, and often discover a sphacelated base.

It usually commences with a small pimple, which runs deeper and deeper into the cellular membrane, until the base becomes extremely broad. In the beginning, it is sometimes accompanied with symptoms of general inflammation, but more commonly with rigours, sickness, faintings, succeeded by great prostration of strength, languid pulse, and symptoms of typhus. It not unfrequently degenerates into a sloughing ulcer. It is sometimes accompanied with a miliary eruption, or with petechiæ dispersed in different parts of the body.

Sometimes a little slough, of a black colour, appears in the middle of the tumour. This was supposed by the ancients to be a part of the body burned to a cinder or hard crust, by the violence of the disease. By some authors, the carbuncle is considered as a sort of gangrenous affection of the cellular substance.—(*Latta.*) The progress of carbuncles to the gangrenous state is generally quick. Their size is various; they have been known to be as large as a plate. Considerable local pain and induration always attend the disease. The skin, indeed, has a peculiar feel, like that of brawn. As the complaint advances, several apertures generally form in the tumour. Through these openings there is discharged a greenish, bloody, fetid, irritating matter. The internal sloughing is often very extensive, even when no signs of mortification can be outwardly discovered.

The constitution is often so low and exhausted, that death follows. The carbuncle, indeed, is most frequent in old persons, whose constitutions have been injured by voluptuous living; and hence we cannot be surprised that the local disease, influenced by the general disorder of the system, should very often assume a dangerous aspect.

The degree of peril may generally be estimated by the magnitude and situation of the tumour, the number of such swellings at the same time, the age of the patient, and the state of his constitution.

*Treatment.*

The treatment of carbuncle may be commenced by fomenting or steaming the part with bitter herbs, as is directed for some other inflammatory complaints. This should be repeated whenever the pain is severe.

After this, let the following poultice be applied :

Take equal parts of pulverized *linseed* and *slippery-elm bark* ; add a sufficient quantity of rain water, and simmer until the linseed becomes mucilaginous, and a poultice of a proper consistence is formed. When it is cool, or about blood warm, to every half pint of the mass, add a wineglassful of good *yest*, and let it be well mixed. Apply to the carbuncle tepid, and before it becomes dry, renew it.

This will be found to have a very salutary effect upon the disease. It will lessen the pain, swelling and inflammation, while, at the same time, it has a tendency to promote suppuration. After some length of time, little orifices will be seen in different parts of the carbuncle, through which a peculiar matter, sometimes resembling water mixed with flour, discharges, and it will often, after a while, be converted into a pulpy or soft substance, which will slough off, and leave a deep opening ; the symptoms of it very much resembling mortification.

After the inflammatory symptoms have in a considerable degree subsided, although erysipelatous inflammation is the characteristic symptom of this complaint, stimulating applications may be used. A small quantity of the *vegetable caustic* may be daily sprinkled upon the ulcer, and the poultice continued. But, if the disease has been in a considerable degree subdued, the black plaster may be applied to it, particularly during the day. Every time it is dressed, it should be cleansed with soap, water and brandy ; after which pledgets of lint may be laid in the opening. Carbuncle is attended with much pain, itching and burning, and therefore it will be found beneficial to wash it often with cooling lotions and ointments.

If the poultice mentioned should in any respect disagree with the patient, which it may possibly in the first stages of the complaint, it may be omitted, and one made by boiling the bark from the root of *sassafras* and mixing the elm bark with the decoction. This makes an excellent poultice for this, and other kinds of inflammation.

The patient must take, internally, such medicines and diet as are calculated to impart tone and energy to the system, as carbuncle appears to be a disease arising from debility.

A *purgative* may be occasionally administered, and the patient may take *yest* ; and, if he be very weak, *porter*, and *Madeira wine*, and through the day he may take an infusion of *Virginia snake-root*. If there are any febrile symptoms, perspiration must be promoted. This course will be found very effectual.

I see in a periodical a case of carbuncle successfully treated by *Hosack*, by means somewhat similar, and which I will here insert.

Although the disease, says he, which is the subject of the following



case, was well known to the ancients,\* and has been well described by modern writers,† and is of so frequent occurrence as to fall under the notice of most practitioners ; it is no less true, that there is at this day, great difference of opinion as to the mode of treating it. It will be recollected, that, but a few years since, it was the subject of a public controversy in this city ; and in Europe, surgeons are no less divided in their treatment of this disease, than they are in this country.

In 1794, I attended a case of carbuncle, in consultation with two of our eldest and most respectable practitioners. The inflammation exhibited by the tumour appeared so active, that we unanimously agreed on the application of lead-water ; poultices of bread and milk ; an abstemious diet, with the internal use of depleting remedies. Under this treatment, the febrile symptoms increased ; the tumour extended ; sphacelus ensued ; and, in a few days, terminated in the death of the patient. The appearances, progress, and termination of this case, led me to the resolution to employ a very different treatment in those cases which might afterwards fall under my notice. Since that period, it has been my practice to support the strength of my patient by a nutritious and stimulant diet, and the free use of bark and wine ; at the same time preserving the tone and action of the part itself, by frequently washing the tumour with spirits or brandy, and by the constant application of a poultice composed of *bark* and *yest*. Finding these remedies successful in many instances which have fallen under my care, I enclose to you the following case, in which this practice was pursued, under the most unpromising circumstances, and therefore is better calculated to establish the principles upon which the cure of this disease is to be conducted ; especially when it occurs in advanced life, and is preceded by, or accompanied with a scorbutic or vitiated habit of body, as, I believe, is most usually the case. I am, with great regard and respect, yours,

New-York, July 31, 1809.

DAVID HOSACK.

On the 5th March, 1808, I was called to Elizabethtown, in New-Jersey, to see Mr. John Hartshorne, aged 84, then on a visit to the family of Mr. Thomas Eddy.

He was extremely debilitated, and suffering much distress, from a tumour on the small of the back, which had been of several days' continuance.

Upon inquiring into the history of the case, I was informed that the tumour, in the first instance, appeared like a common boil ; but having been preceded by several smaller ones, and an eruption on the skin, it excited very little attention on the part of his friends. It, however, very soon was attended with an acute burning pain, and began to spread, the adjacent part assuming a deep red or purple colour. The family physician was called, who, at that time, was not acquainted with the peculiar character of this disease, having never

\* See Galen, Celsus, Fabricius.

† See Wiseman, Bromfield, Kirkland, David, Prix de L'Academie Royale de Chirurgie, tom. iv.

Pouteau, Œuvres Posthumes. Pearson's Surgery. Cooper's Surgery.

met with it before in his practice, and therefore very naturally treated it as a common phlegmon; applying the common cataplasm of bread and milk, for the purpose of inducing suppuration, together with the internal use of those remedies that are usually prescribed for the removal of simple inflammatory tumours.

The inflammation continued to extend, attended with severe pain in the part, fever, restlessness, loss of sleep, and occasional delirium. In this state I found him. The tumour appeared about six inches in diameter; of a dark purple, livid colour; extremely painful and sensible to the touch; in the centre of the swelling the colour was still darker, and was attended with a discharge of a thin acrid humour, as is usual in erysipelatous inflammation, altogether exhibiting the symptoms of approaching sphacelus; his pulses were small and frequent; his skin preternaturally heated, and attended with a sense of itching over the whole surface of the body; his tongue was moist, but foul; his bowels were costive, except when relieved by injections, which were occasionally administered; his urine was sparing in quantity, and high-coloured.

Under these circumstances of a typhoid state of fever, attended with a gangrenous appearance of the tumour, we advised the part affected to be washed with a strong solution of soap and water, rendered more stimulant by the addition of a small quantity of rum or brandy, and afterwards a cataplasm of bark and yest to be applied over the whole surface of the tumour, and the same to be renewed every four hours, making use of fresh yest at each application: a wine-glassful of a decoction of bark and Virginia snake-root was also directed to be taken every two hours, together with the free use of porter, panada made strong with wine, and soup, as his nourishments.

As he suffered a great deal of pain, he was also directed to take occasionally, throughout the day, about twenty-five drops of laudanum, and at night an anodyne draught, if otherwise he was unable to sleep. These directions were faithfully complied with.

Upon visiting him on the 7th, his symptoms were much changed for the better. The appearance of the tumour was more healthy, and assumed a brighter colour, but was somewhat increased in size, and in the extent of the inflammation; his pulses were more full, and less frequent; his strength was also improved; he suffered less pain, and discovered a greater inclination for nourishment than he had before done. As he was fond of eggs and oysters, they were also allowed him. All the other remedies were directed to be continued.

I did not see him again until the 12th; in the mean time the bark and yest poultice had been steadily continued, with his decoction of snake-root, a generous diet, the liberal use of wine, and anodynes whenever he suffered much pain, or was deprived of his rest. At this time the tumour began to discharge, at different parts of its surface, a very healthy\* pus; the apertures were small, but numerous,

\* I am not a little surprised at the observation of John Pearson, (see Principles of Surgery,) and the Editors of the Edinburgh Practice of Physic and Surgery, when they remark, that "an Anthrax never evacuates a laudable pus." Wiseman also observes, "that he never saw a true carbuncle suppurate." On the contrary, I am inclined to believe that the wound never heals without this change in the quality of the discharge.

resembling the cells of a sponge, or honeycomb. It continued thus to discharge for several days.

We did not think it necessary to enlarge the openings, through which the matter was evacuated, as directed by Mr. Kirkland, David,\* Mr. Cooper,† and the Editors of the *Edinburgh Practice of Physic and Surgery*. In cases where the ulceration may be of greater extent than in the present instance, and the quantity of matter very great, this practice may be advisable and necessary. About the 22d, we directed the poultice to be omitted, and the wound to be dressed with simple cerate. Within twenty-four hours after this change in the application, the quality of the discharge was sensibly altered. Instead of a healthy pus, a thin sanies, as in the beginning of the disease, was again poured out. The complexion of the tumour also assumed a darker appearance, and his friends again became alarmed for his safety.

Finding these changes, we again advised the tumour and neighbouring parts to be bathed with brandy, and the poultice of bark and yest to be renewed.

From this time the wound recovered its healthy aspect, and continued to heal, without an unpleasant symptom. When the discharge totally ceased, and the wound had become cicatrized, a light compress of linen, wet with rum or brandy, was directed to be applied to the yet tender surface of the part affected. As he still continued to complain of an itching over the whole surface of the body, we put him on the use of the decoction of sarsaparilla and guaiac.

On the 7th April he was discharged cured, and returned to his family, in Monmouth.

If it were necessary, I could here add the history of another very formidable instance of this disease, as it occurred in the family of the British Consul, Col. Barclay; in which precisely the same treatment was pursued, and with the same happy result.

\* See a very valuable memoir on abscess, by this writer, in the *Memoires de l'Acad. de Chir.* tom. iv.

† See First Lines of the *Practice of Surgery*.

## CHAPTER XXI.

### INFLAMMATION IN THE BREAST, AGUE IN THE BREAST, MAMMARY ABSCESS, &c.—(*Mastodynia.*)

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THE breasts of women are occasionally the seat of very painful and distressing swellings and abscesses. They are sometimes seated deeply in the glandular substance of the breast, and at other times in the investing cellular membrane.

The inflammation commences in the usual manner, and the pain, hardness and swelling are, in general, very considerable.

When the glandular structure is affected, the secretion of milk is much diminished, and is sometimes totally suspended. The disease in its progress is attended with severe pains shooting up into the axilla, and the axillary glands often swell and inflame.

The progress of this complaint varies; sometimes it is rapid, and suppuration takes place in three or four days, and in other cases it is much slower. Sometimes an œdematous swelling forms, and the nipple appears buried below the level of the skin. In some cases several distinct hard tumours are found in the breast; and when these suppurate, an equal number of separate abscesses are formed. It now and then happens that one abscess opens by several small apertures, and sinuses are thus made, communicating with each other under the skin.

Abscesses of the breasts form at different periods after delivery, and are always attended with more or less fever, preceded, in general, by a chilly fit. They result sometimes from exposure to cold, from tight dresses, accidental injuries, long retention of milk, and from the usual causes of inflammation; and, in other instances, no evident cause can be assigned.

A writer has the following remarks upon this disease:—

Mr. Hey describes a very deep-seated abscess of the breast not of frequent occurrence, and not confined to pregnant nor suckling women. Its situation renders all superficial applications ineffectual. The inflammatory stage is tedious; and when the matter has made its way outwards, the discharge continues, and there is no tendency to healing. Sometimes the matter lodges behind the breast, as well as in the substance of the gland, and breaks out in different places, the intermediate parts of the breast feeling as if affected with a scirrhus hardness. Numerous sinuses run in different directions, and, when opened, a soft purple fungus appears within them. The disease goes on in this state for a long while, keeping up hectic symptoms.

Women who suckle are particularly subject to inflammation and suppuration of the breast. The part enlarges, becomes tense, heavy and painful. The integuments of the breast sometimes assume a uniform redness; sometimes they are only red in particular places. The inflammation may affect the mammary gland itself, or be confined to the skin and surrounding cellular substance. In the latter



case, the inflamed part is equally tense ; but when the glandular structure of the breast is also affected, the enlargement is irregular, and seems to consist of one or more large tumours, situated in the substance of the part. The pain often extends to the axillary glands. The secretion of the milk is not always suppressed when the inflammation is confined to the integuments, and suppuration is said to come on more quickly than in the affections of the mammary gland itself. When the symptoms of inflammation continue to increase for four or five days, suppuration may be expected ; unless the progress of the inflammation be slow, and its degree moderate, in which circumstances resolution may often be obtained, even as late as a fortnight after the first attack. Acute inflammation of the breast is generally attended with more or less sympathetic inflammatory fever.—(See *Fevers*.) According to the description lately given of the case by Sir Astley Cooper, it is adhesive in the first stage, suppurative in the second, and ulcerative in the third. Swelling is followed by a blush of inflammation upon the surface of the breast, and throbbing, very acute pain. “A particular prominence and smoothness are observed at one part of the tumour, with a sense of fluctuation from the presence of matter. The constitution is also highly irritated, which is evinced by the occurrence of shivering, succeeded by heat and profuse perspiration. Over the most prominent part of the swelling, the cuticle separates, ulceration follows in the cutis, and the matter becomes discharged through the aperture thus produced.”—(*Illustrations of Diseases of the Breast*, p. 7.)

Women are most liable to mammary abscesses within the first three months after parturition ; but they are also much exposed to the disorder as long as they continue to suckle.

The most common causes of mammary abscess, as enumerated by writers in general, are, repressing the secretion of milk at an early period, mental disturbance, fright, &c. ; exposure to cold, moving the arms too much while the breasts are large and distended, bruises, and other external injuries. The causes are not always obvious. In Sir Astley Cooper's opinion, the principal cause of acute inflammation and suppuration of the breast, is “the rush of blood, which takes place each time the child is applied to the bosom, and which by nurses is called the *draught*, and is the preparatory step to the secretion of milk.” He also adverts to the frequent exposure of the bosom in suckling, and the active exertions of the child in sucking, as promoting the origin of the complaint. The nurse, he says, often produces these abscesses immediately after the lying-in, by not putting the child soon enough to the breast, and by giving the mother strong drink.—(See *Illustrations of Diseases of the Breast*, p. 8.)

The matter is sometimes contained in one cyst or cavity ; sometimes in several ; but the abscess generally breaks near the nipple.

As all inflammations of the breast are attended with considerable induration, these cases should be carefully distinguished from other swellings of a more incurable kind. It is said that scrofulous tumours of the mamma, which have existed a long while, often disappear after the occurrence of a milk abscess. Women who have never been pregnant, are sometimes affected with suppuration in the

breast, supposed by Mr. James to be connected with uterine or gastric disorder. Even men are liable to abscesses of the breast.

In the early period of the affection, resolution should be attempted.

### *Treatment.*

If called in season to swelled and inflamed breasts, by proper treatment they may be frequently discussed, and it should ever be our object to fulfil this indication, or, in other words, to prevent suppuration; for when an abscess forms, it is a disease attended with great pain and suffering, and indeed this is usually the case in every stage of it.

I have applied the following ointment with decided advantage, in cases where the breast has been very painful, and very much swelled:—

Take *gum camphor*, two drachms;

Add a few drops of *alcohol*, and rub in a mortar, until it is pulverized;

Then add an ounce of lard, and continue to rub or triturate until the articles are well mixed, or incorporated together. Let the breast be bathed with this three or four times a day, the patient at the same time exposing the breast to a fire or stove.

After this process, or even before, if it is more convenient, let the breast be well fomented or steamed. Take *hops*, *tansy*, *wormwood*, *hoarhound* and *catnip*, a handful of each plant or herb. Boil in equal parts of vinegar and rain water, and keep them all the time covered. After the strength has been extracted, or after a strong decoction has been made, add a small quantity of soft soap, and boil a few minutes longer. Then put the whole into a wooden bowl of a suitable size, and place it underneath the breast and arm, and retain the steam by means of a blanket. Let this be continued fifteen or twenty minutes, or until the parts perspire.

It should be repeated as often as the pain becomes severe. This fomentation, or steaming, usually acts like a charm in allaying pain, swelling and inflammation, not only in this, but in other similar diseases.

When this has been done, a *discutient plaster* should be applied over the whole breast; and a small place should be left for the nipple.

What we term our common *discutient* or *strengthening plaster* is well calculated for this purpose.

A moderate dose of physic should be administered, and the bowels subsequently kept regular.

This course will remove the induration, pain and swelling, if it can be done by what is termed resolution, or if it can be dispersed without the formation of pus or matter. But this desirable object cannot always be accomplished. Although in all cases, the urgent symptoms can be mitigated; yet, when they are very severe, suppuration is very apt to follow. Therefore, when matter cannot be prevented from forming, it will be necessary to *poultice* the breast. For this purpose, one made of the slippery-elm bark should be used, combined with the *cicuta*, or other articles.

The cicuta leaves should be simmered in rain water, until they are soft; after which, a suitable quantity of the slippery-elm bark pulverized, should be mixed with it, to form a poultice of a proper consistence, to be applied tepid or blood-warm. If it acts favourably, let it be continued, otherwise let it be removed, and the bark mixed with *weak ley*, and applied in the same manner.

Sometimes it becomes necessary after a few days to change the poultice, even though it prove very favourable on its first application. If this should happen, from the obstinacy or violence of the inflammation, a poultice may be made of *catnip leaves*, simmered in rain water until they are soft, and then mixed with equal parts of linseed and elm bark, and to every poultice let a tablespoonful of sweet oil be added.

Either of these poultices will be found excellent, and will soon promote suppuration, while at the same time, they will diminish the severe pain attendant on the complaint.

*Perspiration* should be promoted by taking infusions of medicinal plants, such as *catnip*, *hyssop*, *sage*, &c.

If the patient is in much pain, and cannot sleep, let eight or ten grains of the *diaphoretic powders* be given at night. At the same time, let the feet be bathed, to equalize the circulation.

When an abscess, or pus, has formed in the breast, the physician usually plunges in a lance to let it out; but I consider this practice unjustifiable. 1st, the operation is exceedingly painful, from the great irritability of the parts; 2d, the incision after it has been made is very liable to close, which brings on a greater degree of inflammation.

It appears that a certain process is necessary for nature to pass through, in order to remove the disease; and if there be much interference of art, this process seems to do violence to her laws, and thus aggravate all the symptoms.

I have found it best, where the strength of the patient will admit, to let the abscess burst spontaneously, or rather by the aid of the poultice. But if the sufferings of the patient be very severe, and the suppurative process very tedious, some assistance may be rendered; but it must be well timed, and by attention it is easy to discover when such aid becomes necessary. When matter has fairly formed, in a state to be discharged, it is concentrated in a particular part of the breast, and a sort of tumour or projection takes place, and which assumes a whiter appearance than the surrounding parts. Not only so, by pressing upon this prominence with the finger, it is very soft and elastic, evincing clearly that it contains matter. When these symptoms appear, a very small incision, or puncture, may be made in an oblique direction.

But such is the aversion of most women to the lancet, that they had rather suffer longer than to have the abscess punctured. I have very seldom ever had recourse to it in the worst cases, having either waited for the swelling to break of itself, or have aided nature by slowly and moderately making a small opening into the abscess, by means of a probe. I usually take a sharp diamond or three-cornered probe, and carefully press it upon the most depending part of the tumour, at the same time that I give it a spiral motion, backwards and forwards, and



thus continue for about twenty or thirty minutes, or until matter begins to discharge. Sometimes it requires two or three operations of this kind before the object is effected, and occasionally I have dipped the point of the probe in water, then in the mineral caustic, and repeated the same process, in order that the escharotic may afterwards make an opening, in case the probe alone should not be sufficient. But one or two applications of the probe generally answers the purpose. Two thirds of the patients which I have had, have applied to me in consequence of treating the complaint without using the lancet.

After the matter has been evacuated, or discharged from the breast, the poultice must be continued until the inflammation has entirely subsided; after which, the *black salve* or plaster may be applied.

The breast will, in most instances, heal after a short time, but not always. From various causes it may assume a very unfavourable character, even after suppuration has taken place. The glands become indurated, the matter mixed with milk, and discharges from one, or perhaps half a dozen sinuses or openings; the pain and inflammation is considerable, and the general health suffers. But I have found that this condition of the breast proceeds from bad practice, from neglect, or from the want of proper treatment. The sinuses are often suffered to close, which gives rise to much pain and inflammation.

It will be necessary, in this condition of the disease, to apply the *discutient ointment*, to remove the hardness of the breast, and also poultices, particularly at night. But the most important indication to fulfil, is to give free vent to the matter, not by opening all the apertures, as some surgeons recommend, but by keeping them continually open, by the use of *tents*; and if they alone are not sufficient to effect this, before they are introduced let them be rolled in a mild *escharotic*. In addition to this, let *soap* and water be injected into the orifices morning and night, and, as a change, equal parts of the tincture of *gum myrrh* and water. This course must be continued until the sinuses heal; and after they have healed, should there be much hardness left, let the breast be often bathed with the discutient ointment, and afterwards, a sweating or discutient plaster kept constantly applied to it. White's strengthening or adhesive plaster is excellent.

If the disease is mild, and there are only a few openings in the breast, the infant may be nursed or draw the breast. But if a great portion of the breast is involved in the disease, it must suck the other only, but may be applied when it has healed, as the milk will return and become as healthy as in the other breast. One great cause of the mischief, is a collection of milk in the breast; hence, it becomes important that it should be drawn by some person, or by nipple shells or glasses. Some are in the habit of applying a small puppy, particularly when the breast is extensively diseased.

Tonics and a nutritious diet must be given, to keep up the strength of the patient.

By this method I have cured the most desperate and loathsome diseases of this kind which are on record, when the whole breast has been, as it were, a mass of corruption, numerous sinuses pouring out matter and milk, the glands so indurated that they have been apparently in a state of scirrhus or cancer, and when other physicians have



treated them without the least benefit. Nor has the practice failed in a single instance. It is attended uniformly and invariably with the same success.

I will conclude this chapter by subjoining some remarks upon this subject, by a physician, whose name I am unable to give.

The pain and inflammation of the nipples often extend to the breast itself, and suppuration takes place. I proceed, therefore, to make some observations on this subject, which, though important, has not, that I know of, been yet publicly treated of.

It would be needless, in this place, to take up the reader's time, by adverting to the various other occasions which threaten such a complaint, since, perhaps, the only one in the patient's power to prevent, is that of taking cold; as frequent an occasion, indeed, as any, and against which every precaution ought to be taken. With a view to this, it may be observed, that the custom of bathing the breasts of women, who do not suckle, frequently proves very injurious, though it has not, perhaps, been generally suspected. The rubbing in a little oil and spirit, as soon as the patient is delivered, may be harmless enough; though, if something must be done, in compliance with custom, the application of a plaster will answer every ordinary intention, without any of the disadvantages which attend the frequent repetition of useless embrocations, which expose the part to taking cold. And as the above, and any other such lotions as nurses usually recommend, and place great confidence in, have no such power as is generally attributed to them, they are certainly much better let alone: and if it should be thought proper to have recourse to such as actually possess any considerably repelling property, they will, of course, be directed by the practitioner himself, who will give every necessary caution; as the consequences of cold taken in the application, are generally much more likely to give rise to suppuration, than leaving the business to nature.\*

The first symptoms of such an unfavourable turn, are usually a deep lancinating pain, hardness and tumour in some part of the breast, and a considerable diminution of the customary discharge of milk by the nipple. This is the moment to prevent the apprehended mischief, as a very short delay renders the means ineffectual; the skin soon becoming discoloured, and the breast greatly enlarged. To remedy this, immediate recourse should be had to proper medicines, but

\* It is perhaps worthy of remark on this occasion, that the mammary-abscess was for a number of years a very common complaint in the *British Lying-in Hospital*; and has always been attributed to cold, as the most general cause. The justness of this suspicion has been confirmed since water-closets have been constructed on every floor. Previous to this, several women, from motives of delicacy, were inclined to go, too early, across a paved yard, though continually cautioned against it: but for full two years, since that contrivance has been made, there have been only two instances of the mammary-abscess: and the like exemption has continued since the last edition. Though this circumstance may, perhaps, be thought to prove too much, it nevertheless being a fact, ought to have its proper weight.

above all to sedative applications, which are usually found to be the most powerful discutients. Sometimes, however, solutions of crude sal ammoniac, with the addition of a good quantity of spirit, and, if the inflammation be very recent, some vinegar, will be more advisable than saturnine remedies. Compresses of coarse linen cloth, wetted in such a liquor, made moderately warm, and renewed as often as they become dry, are abundantly preferable to those to which surgeons have usually had recourse.

When the above means are made use of in proper time, the inflammatory symptoms will soon disappear, the pain be entirely removed, and if the milk runs freely again from the nipple, there will be no further danger of suppuration. On the other hand, if there be not a very early and considerable abatement of the first symptoms, however slowly the process may go on, the breast will seldom fail to suppurate. In this state, therefore, the plan ought very soon to be changed, in order to forward the work of maturation.

The whole breast should now be covered with a mild suppurative poultice, which must be continued till the matter can be felt; the part should also be fomented twice a day, if the abscess threatens to be large, and does not incline to ripen fast, after there are evident tokens of suppuration. The circumstance of early maturation is of the greatest importance, for in proportion to the length of time taken up in that process, will be the size of the abscess, and the time afterwards necessary for its cure; at least, this is pretty uniformly the case.

Of no less importance is the manner of treating abscesses after the matter is well formed. And here I am constrained to oppose the ancient and common method of surgeons, that of making a large opening with the knife; which can seldom, or never be necessary. This happy idea originated from the late ingenious Dr. *Hunter*; and I believe, that gentlemen in the department of midwifery, at least in *London*, are well acquainted with the many advantages of sparing women this painful operation: but as it has not been noticed by surgical writers, nor, I think, sufficiently approved of by the generality of the profession, there are probably many practitioners who are not duly acquainted with it.

The impropriety of making large openings in the breast, arises, I apprehend, from its glandular structure, and peculiar use, together with the harmless nature of the complaint. But I shall not enlarge here, on the many unfavourable circumstances attending such a practice, and the tediousness of the cure as the inevitable consequence. I mean only to hint at a method everywise preferable to so painful a process. But not only are the larger incisions highly improper, which are made with the knife, but smaller openings with a lancet are generally better let alone; not only because commonly needless, and very distressing to the patient, but the breast will heal sooner when the abscess is left to burst of itself. Hereby, we are sure the suppuration will become as complete as the case will admit of, and the little jagged round aperture nature makes for herself, will keep open much better than the smooth puncture from a lancet. All that is commonly necessary, is to cover the part with a soft poultice; to keep it well

supported by an easy bandage ; and carefully to press out the matter, and renew the poultice twice or three times a day.

I am aware, that the patient may sometimes undergo some very considerable pain for twelve or four-and-twenty hours, by the matter being left to make its own way through the skin, and I have myself formerly made this circumstance an argument for opening some small abscesses ; but, from a fair comparison of all the effects of each mode, am satisfied to which the preference ought to be given. For, besides that the pain which leaving an abscess to burst itself, may without any disadvantage be much abated, or entirely removed by a dose or two of laudanum, I have, on the other hand, after having opened these abscesses in order to obviate that pain, received no thanks from my patients ; who, partly from the dread some people have of any cutting instrument, and partly from the actual pain of the little operation, and its consequences for some hours afterwards, have on a subsequent occasion determined to leave the business to nature, and to endure with patience the effects of her operations, or at most, to stun the pain by an opiate taken at bed-time. But it has been suggested, that there are other, and more material advantages, resulting from a well-timed opening made by the lancet, and that for the want of it, the little orifice will often be closed up, and a fresh abscess be formed. In answer to this, I must say, that I am constrained to doubt the justness of this observation. I was myself bred up to be of this opinion, and was with difficulty led to change it ; but a long and pretty extensive practice, and much observation, have, as I think, led me to form a more just opinion of the matter. The fact, indeed, is, that the little apertures may be very easily and certainly kept open, as long as there remains anything to be discharged from parts with which they communicate, and that fresh imposthumations will not be formed, but in cases where other parts of the breast are in an obstructed and diseased state, and not yet inclined to suppuration ; in which case, let the first abscess be opened, and treated in whatever manner it may, new imposthumations will be formed, and, indeed, in this case, are to be desired. Whereas, when other diseased parts have communicated with the first abscess, I have without difficulty kept an orifice (not larger than a pin's head) for many weeks open, till, the various indurated parts having supplicated, the matter has found its way to the first and only orifice, which has discharged very considerably, and for a long time together, without any interruption ; and when the breast has got well, only the smallest scar imaginable has remained. And it might be here noticed again, that the little jagged aperture which nature has made for herself, keeps open much better than one from the lancet, though made four or five times as large : every surgeon knowing how soon incised wounds are disposed to heal up at the angles, especially if extended into the sound skin, leaving only a kind of fistulous orifice in the centre. So that upon the whole, after having bestowed much attention on this subject, it is still my unprejudiced opinion, that it is in general best to leave the business to nature ; and that if there be any merit in being the first publisher of such an opinion, it properly belongs to this work.



The above method of discharging the matter, it was said, is usually the best ; there are, however, instances, where I have thought small punctures made with the point of a lancet have their use. Such are, first, abscesses that suppurate very quick, and with excessive cutaneous inflammation ; whereby, early and pretty large sloughs will soon be formed, if the ulcer be left to break, though some parts remain yet very hard around the protruding surface. So likewise in those cases where the whole breast is very hard, and the habit not disposed to form matter so plentifully as the indurated state of the part seems to require. Here a great number of very small imposthumations are formed ; come very slowly to a head ; often thicken and harden the skin ; are but little disposed to break, and cease to discharge as soon as they have vent. The little tumours will even sometimes subside, if an opening is not made soon after the matter can be felt ; and the induration remains a long time nearly the same. Poultices of more potential heat than those of mere bread and milk, are here particularly serviceable, as well as light frictions with a weak volatile liniment, which should not be forcibly rubbed in, but spread lightly over the breast.

The worst cases I have met with, have arisen from cold taken after the end of the month, and are, perhaps, more common in women who have not suckled their children, nor been properly attentive to the turn of the milk. Here, one or more very large lumps are often pretty suddenly formed, or sometimes smaller ones almost insensibly run together, and occupy a great part of the breast ; are always exceedingly hard, but are not usually painful at first. The appearance, in some instances, is very alarming, but they all, nevertheless, end perfectly well, if prudently managed. I have been called to cases of several months' standing, where the breast had entirely lost its natural appearance, had become hard in every part, flattened, and the nipple been almost obliterated. When the disease extends to such a degree, suppuration must take place, and, indeed, it is a desirable event, as otherwise mischief would ensue ; for, I believe, an entire resolution of the tumour is not to be effected. Hence, saturnine applications, which have been much too indiscriminately made use of, are here highly improper.

By these means, I have succeeded in cases to appearance exceedingly unfavourable, and not at first to be distinguished from incurable scirrhus ; which have, nevertheless, got well in a very reasonable time, and the patients have afterwards suckled children without the least inconvenience. In such cases, more especially, the abscess when formed should always be left to burst of itself, the use of the knife having a direct tendency to increase the induration of the parts, as well as to injure the structure of the breast ; and at the best, it has been said, is, in most cases, perfectly unnecessary.

Sometimes, where the suppuration has gone on very slowly, an oozing of ichor or sanies will remain, and often a discharge of milk from the sore, long after the tumour and hardness are removed. And I have been applied to, where a small fistulous sore has remained for some months, which I have safely dried up in as few days. If the



sinus runs deep, an astringent solution by way of an injection may be used.

The above hints are thrown together, as the result of long experience both in the *lying-in hospital*, and in private practice; not, indeed, as a treatise upon abscesses of the breast, but as the outlines of a pleasant and safe practice, which every man of experience will know how to apply, and the young practitioner may possibly profit from.

## CHAPTER XXII.

### ST. ANTHONY'S FIRE—(*Erysipelas*.)

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#### *Description.*

ERYSIPELAS, or Anthony's Fire, may be defined to be a cutaneous inflammation, attended with redness, which disappears, and leaves a white spot for a short time after being touched with the end of the finger; and the affection, which is irregularly circumscribed by a defined line, is characterized by a remarkable propensity to spread.

The part is generally of a bright red colour, clear and shining. The disorder is not accompanied by throbbing; and a burning heat and tingling are felt, rather than acute pain. If the skin alone be affected, there is hardly any perceptible swelling, and no tension; "yet some difference is perceived between the sound and the inflamed part, by passing the finger over it." In many instances, vesications arise.

This disease, says Thomas, is an inflammatory affection, accompanied usually with drowsiness, often, however, with delirium, when the face is affected, and with a fever of a few days' continuance.

When the inflammation is principally confined to the skin, and is unattended by any affection of the system, it is called erythema; but when the system is affected, it is named erysipelas.

It sometimes happens that the inflammation extends to the cellular membrane beneath the skin, whence a real phlegmon and collection of matter become joined to the erysipelas, which combination has been denominated erysipelas phlegmonodes; but this is mostly the case where there has been a previous scratch or injury of the skin.

Every part of the body is equally liable to erysipelatous inflammation, but it more frequently appears on the face, legs and feet, than any where else, when seated externally; and it occurs oftener in warm climates than phlegmonous inflammation.

Erysipelas does not often attack persons before the age of puberty: it is a disease of advanced life, met with more frequently among women than men, particularly those of a sanguine, irritable habit. In many people there seems to exist a predisposition to the disease. Sometimes it returns periodically, attacking patients once or twice in the year, and in some instances much oftener, greatly exhausting the strength thereby.

#### *Causes.*

It is brought on by the several causes that are apt to excite inflammation; such as injuries of all kinds, the external application of stimulant, acrid matters to the skin, exposure to cold, particularly during

a course of mercury; obstructed perspiration, suppressed evacuations, or other causes inducing plethora; the presence of irritating matter in the primæ viæ or first passages, &c.; and it may likewise be occasioned perhaps by a certain matter generated within the body, and thrown out on its surface. A particular state of the atmosphere seems sometimes to render it epidemical, as we often find the scarlet fever, which is a species of internal erysipelas, prevail as such.

It seems connected likewise with that peculiar state of the atmosphere which occurs in hospitals and crowded ships of war, occasioning the slightest wound to produce erysipelas.

A farther proof that erysipelas is mostly dependent on constitutional causes is, that the affection is particularly frequent in autumn, or in any season when hot weather is succeeded by cold and wet.

The cases termed exanthematous, and which are mostly sympathetic, particularly from disorder of the primæ viæ or liver; and hence the epithets *bilious* and *gastric*. Phlegmonous erysipelas is most commonly produced by the wound of bleeding, injuries of the superficial bursæ, as those of the patella and olecranon, incised and lacerated wounds, and compound fractures; inflamed ulcers of the legs, and a full diet to persons who have large wounds or ulcers rapidly healing; the wounds received in dissection, &c.

In most cases, erysipelas would seem to be intimately dependent on the state of the constitution. Thus, persons in the habit of drunkenness and other kinds of intemperance, and who in a state of intoxication meet with local injuries, often have erysipelatous inflammation in consequence of them. Other subjects, who lead more regular lives, experience, when they meet with similar injuries, healthy phlegmonous inflammation.

It may proceed from a retention of morbid humours in the blood, which, not being eliminated, are located in the capillary system, and become a source of erysipelatous irritation.

### *Symptoms.*

The skin is preternaturally red and shining, having a light or rosy tint in the early stage and slighter cases of the affection; whence, in some languages, it has received the popular appellation of the *rose*; while, in other instances, it is of a bright scarlet, or even a deep and livid red. The colour disappears on pressure, returning as soon as the pressure is removed. If the skin alone be affected, there is hardly any perceptible swelling, and no tension; yet some difference is perceived between the sound and the inflamed part, by passing the finger over it. Erysipelas, however, is found by Lawrence to be seldom confined to the skin, except in the slightest cases; effusion soon takes place into the cellular texture, causing a soft swelling; and this may be considerable, together with much tension and a shining surface, when a large part of the body or an entire limb is involved. The inflamed part is hot and painful; at first, a stinging or itching is felt, which soon becomes a sharp, smarting and burning sensation, with acute pain on pressure. The pain is not so intense and unremitting as in phlegmon, nor is it attended with

throbbing. This kind of inflammation often ends by resolution; the redness and other symptoms disappearing, and the skin recovering its natural state, with or without desquamation of the cuticle. Frequently serous or watery effusion takes place from the inflamed surface, elevating the skin into smaller or larger vesicles, like those produced by blisters; or raising it by a soft, yellow, jelly-like deposit, which remains slightly adherent to both the cutis and cuticle. The contents of the vesicles are transparent, sometimes nearly colourless, but more commonly yellowish; sometimes they consist of a thin pus or matter, or they may exhibit a bloody or livid discoloration. The fluid loses its clearness, becoming thicker, opaque, and whitish or yellowish. The cuticle gives way; the fluid escapes, and incrustations form, which soon fall off, leaving the skin sound; or they may lead to superficial ulcerations. Erysipelas sometimes produces gangrene, but this is of comparatively rare occurrence. So long as this inflammation is confined to the skin, it does not produce suppuration; and the affection of the cellular structure is too slight for that termination in most cases of simple erysipelas. It may, however, become more severe at one point; and thus we occasionally see the formation of abscess under the skin towards the decline or after the disappearance of the general erysipelatous redness. This inflammation generally attacks a considerable surface of the skin, the inflamed part being irregularly circumscribed by a defined line. It spreads quickly to the neighbouring skin, declining and disappearing in the part first affected. Thus, we commonly see the various stages of erysipelas existing together at the same time in different parts of the skin. The portion last affected is red and swelled; another part is vesicated; while others exhibit incrustation and desquamation. Sometimes it leaves the part first affected, to appear in a distant situation. Its origin, developement and complete termination, seldom take place in one and the same spot. The neighbouring absorbent glands are frequently inflamed, and red streaks are sometimes seen leading to them.—(*Lawrence, in Med. Chir. Trans.* vol. xiv.)

A little before the appearance of the redness, and sometimes during several previous days, the patient experiences considerable indisposition, loses his appetite, has shiverings and violent pains in his head, accompanied sometimes with vomiting, and always with weakness and dejection. Frequently bilious complaints occur, attended with bitter taste in the mouth, and fetid eructations from the stomach. The tongue is moist, and covered with a yellow mucus. The patient afterwards has a dry, parched skin, constipation, an accelerated pulse, thirst, and other common symptoms of fever. Blood drawn from a vein exhibits in a greater or less degree the inflammatory character. "Often, particularly when the head is the seat of erysipelas, the sensorium is principally affected, and symptoms are of the kind called nervous, such as pain and oppression of the head, sleepiness, lethargy or delirium. The tongue in such cases is dry and brown; but, according to Lawrence, this state of the organ is often owing principally to the circumstance of the patient breathing entirely through the mouth; the pulse is rapid and feeble, and there is great loss of muscular strength; in short, the symptoms at length



are those called typhoid. In other cases, the circulation and the nervous system are not much affected; but there is pain in the epigastric region, foul tongue, with bad taste in the mouth, nausea and constipation; that is, so many indications of disordered stomach and intestinal canal, to which, as its cause, the local affection must be referred."—(*Med. Chir. Trans.* obs. xiv. p. 6.) This last form of the complaint has been termed by Desault and others *bilious erysipelas*.

When erysipelas attacks the face, it comes on with chilliness, succeeded by heat, restlessness, thirst and other febrile symptoms, with drowsiness or tendency to coma or delirium, and the pulse is very frequent and full. At the end of two or three days, a fiery redness appears on some part of the face, and this at length extends to the scalp, and then gradually down the neck, leaving a tumefaction in every part the redness has occupied. The whole face at length becomes turgid, and the eyelids are so much swelled as to deprive the patient of sight. When the redness and swelling have continued for some time, blisters of different sizes, containing a thin, colourless, acrid liquor, arise on different parts of the face; the skin puts on a livid appearance in the blistered places; but in those not affected with blisters, the cuticle, towards the close of the disease, falls off in scales.

This disease has sometimes prevailed as an epidemic. It is stated that in Toulouse it prevailed as an epidemic in 1716, and proved almost as fatal as the plague.

Hippocrates mentions an erysipelas which spread among the people, and proved very fatal. The whole arm, leg, &c., had their soft parts in some instances almost entirely destroyed by mortification.

### *Common Treatment.*

Bleeding, leeching, mercury, tartar emetic, blisters, deep incisions with the lancet, &c.

In cases of bilious erysipelas, says a modern author, many modern practitioners would be bolder with antimonials than Desault, first by imitating Richter, and giving an emetic at the commencement of the attack, and then by exhibiting more freely either antimonial powder or tartarized antimony, with a dose or two of calomel.

### *Reformed Practice.*

From the derangement of the digestive organs, it is obvious that purgatives should be given. *Senna*, *manna* and *cream of tartar*, with a little *fennel-seed*, to prevent griping, answers a good purpose. A dose of this should be given every other day, or twice a week, or according to circumstances. During the day the patient may take a strong decoction of *elder flowers*; they are laxative, cooling and alterative. These medicines, by their *depletive* and *refrigerant* operation, diminish the inflammatory symptoms.

I have found that the vapour bath is attended with a very excellent effect in this complaint. One single bath will sometimes remove all

the heat, swelling, itching, &c. I think it is better when it is so contrived that the head, as well as other parts of the body, be exposed to the heat or steam of the herbs.

The good effects, I think, depend simply upon the discharge of the skin, or the perspiration produced. The acrid humours, which appear to be the exciting cause of the complaint, are expelled from the system, by restoring this secretion. If it be inconvenient to use that kind of vapour bath which admits the application of steam to the head, the common domestic vapour bath may be substituted.

*Sudorific medicines*, then, are indispensably necessary in the treatment of St. Anthony's fire, or erysipelas.

External or local applications are also very valuable in every species or stage of this disease. The inflamed parts may be often anointed with the following :

Take *marshmallow* and *elder bark*, equal parts, and a suitable quantity ; simmer in spirits ; then cover with *fresh butter* ; simmer until the leaves are crisp ; strain, and apply with a piece of linen or the finger. This ointment allays the irritation and itching, and will seldom be applied without decided benefit.

Some have an idea that any preparations of oil are injurious, but this idea is not correct, as I have proved by ample experience. The opinion has been formed, no doubt, in consequence of uniting with greasy or oily substances acrid or stimulating agents.

The parts should be frequently washed with the following liquid or tincture :

Take of the leaves of *Celandine* 1 oz.,

*Irish whiskey*, or, as a substitute, common *whiskey* or *spirits*, 1 pt. Add the leaves, and after it has stood a few hours it is fit for use. Let this be often applied, three or four times in the course of the day.

When the extremities are the seat of erysipelas, and when the swelling and inflammation are very great, the following will be found a good application :

Take *Borax*, 1 drachm,

*Superacetate of lead*,  $\frac{1}{2}$  drachm,

*Rain*, or *soft water*, 1 porter bottle ;

Pulverize the articles, and add them to the water. Let linen cloths be dipped in this mixture, and kept upon the parts affected.

But of all the articles or preparations which I have ever used for erysipelas, in any stage of it, I have found a poultice made of the *slippery elm bark* to be the most decidedly beneficial. Indeed, in this, as well as every other inflammatory affection, it proves a sovereign remedy. If the patient is in even the greatest distress, he experiences relief as soon as it is applied. The superfine flour of the bark should be mixed with pure milk ; and, what is sometimes preferable, butter-milk or fresh cream, when it can be procured.

If this disease terminates in ulceration, or gangrenous blisters appear, a little of good brewer's *yeast* must be added to the same poultice. Where there is an ichorous discharge, apply a little of the elm bark, powdered, to absorb it. Some are in the habit of using burnt rye-

meal in this disease, which, no doubt, is in some degree serviceable. A continuance in these means, in a short time will arrest the disease, and soon remove it.

Nothing stimulating or heating should be given to the patient. A cooling diet should be recommended, consisting principally of milk, vegetables and ripe fruit.

## CHAPTER XXIII.

### ANEURISM—(*Aneurisma.*)

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#### *Description.*

By the term aneurism, we understand a pulsating tumour, situated over some artery, containing blood, and formed by the dilatation or rupture of the proper coats of the artery, internal and muscular.

Aneurisms are situated either externally or internally: that is, they are either so situated on the limbs, as that access may be had to them, and the nature of the disease clearly ascertained, or they are so placed in cavities of the body, such as the abdomen, chest, and cranium, as to render the nature of the disease very often extremely doubtful.

They are divided by writers into *true* and *false*. One kind is made out to be that which depends on an extension or dilatation of the coats of an artery, and is denominated the *true* aneurism; and that which proceeds from an effusion of arterial blood into the surrounding parts, is called *false*.

Scarpa appears to entertain a different opinion of aneurisms from other writers. "I have ascertained," says he, "in the most certain and unequivocal manner, that there is only one kind or form of this disease, viz. that formed by a solution of continuity or rupture of the proper coats of the artery, with effusions of blood into the surrounding cellular substance; which solution of continuity is occasioned sometimes by a *wound*, a *steatomatous earthy degeneration*, a *corroding ulcer*, or a *rupture* of the proper coats (the internal and muscular) of the artery, without the concurrence of a preternatural dilatation of these coats being essential to the formation of this disease, and therefore that every aneurism, whether it be internal or external, circumscribed or diffused, is *always formed by effusion*."

Scarpa draws the following conclusions:—"1. That this disease is invariably formed by the rupture of the proper coats of the artery. 2. That the aneurismal sac is never formed by a dilatation of the proper coats of the artery, but undoubtedly by the cellular sheath, which the artery receives in common with the parts contiguous to it; over which cellular sheath the pleura is placed in the thorax, and the peritoneum in the abdomen. 3. That if the aorta, immediately above the heart, appears sometimes increased beyond its natural diameter, this is not common to all the rest of the artery, and when the aorta in the vicinity of the heart yields to a dilatation greater than natural, this dilatation does not constitute, properly speaking, the essence of aneurism. 4. That there are none of those marks regarded by medical men as characteristic of aneurism from dilatation, which may not be met with in aneurism from rupture, including even the circumscribed figure of the tumour. 5. That the distinction of aneurism into true and spurious, adopted by the schools, is only the production of a false



theory ; since observation shows that there is only one form of the disease, or that caused by a rupture of the proper coats of the artery, and an effusion of the arterial blood into the cellular sheath which surrounds the ruptured artery.”—(See *Treatise on Aneurism*, by A. Scarpa, transl. by J. H. Wishart, Edin. 1808.)

Such were the inferences made by Scarpa, in 1804, one of the most distinguished anatomists and surgeons of the present day upon the continent. It has been already stated, that, great as this authority is, several eminent modern surgeons, as Richerand, Boyer, Dubois, Dupuytren, Sabatier, Breschet, &c., did not yield to it, but still contended that in some aneurisms the coats of the artery were dilated. These professors in France coincided with what has been usually taught upon this subject in the surgical schools of Great Britain. Every lecturer here has been accustomed to describe the distinctions of aneurisms into true and false, or into some cases which are accompanied with dilatation, and into others which are attended with rupture of the arterial coats. A few years ago, Mr. Hodgson, of Birmingham, published a valuable treatise on aneurism, in which work he differs from Scarpa, and joins those surgical writers who believe in the occasional dilatation of the coats of the arteries.—(*S. Cooper*.)

Partial as well as general dilatation (says Hodgson) frequently precedes the formation of aneurism in the arteries of the extremities. A gentleman had a large aneurism in the thigh, which had undergone a spontaneous cure. Upon examining the limb after death, the popliteal artery was found to be thickened and covered with calcareous matter. A small pouch, which would have contained the seed of an orange, originated from the side of this artery. This little sac was evidently formed by a dilatation of the coats of the vessel. A man died from the sloughing of an aneurism in the ham ; in the femoral artery there was a small aneurism about as large as a walnut. The external coat was dissected from the surface of the tumour to a considerable extent. The internal and middle coats were evidently dilated, and contributed to the formation of the sac.

In many instances the most fatal accidents have happened, in consequence of incisions having been made in aneurisms, which were mistaken for abscesses because there was no pulsation. Vesalius was consulted about a tumour of the back, which he pronounced to be an aneurism. Soon afterward an imprudent practitioner made an opening in the swelling, and the patient bled to death in a very short time. Ruysch relates that a friend of his opened a tumour near the heel, not supposed to be an aneurism, and the greatest difficulty was experienced in suppressing the hæmorrhage. De Haen speaks of a patient, who died in consequence of an opening which had been made in a similar swelling at the knee, although Boerhaave had given his advice against the performance of such an operation. Palfin, Schlitting, Warner, and others, have recorded mistakes of the same kind. (*Sabatier*, t. iii. p. 167.)

Notwithstanding a pulsation is one of the most prominent symptoms of an aneurism, it is not to be inferred, that every swelling which pulsates is unquestionably of this description.

Whenever an aneurismal sac of immoderate size beats violently and

for a long while against the bones, as the sternum, ribs, clavicle, and vertebræ, they are in the end invariably destroyed, so that the aneurismal sac elevates the integuments of the thorax, or back, and pulsates immediately under the skin. Searpa, with the best modern writers, attributes the effects to absorption in consequence of the pressure.

Aneurisms are common in the aorta, and they are particularly often met with in the popliteal artery. The vessels which are next to these the most usually affected, are the crural, common carotid, subclavian and brachial arteries. The temporal and occipital arteries, and those of the leg, foot, fore-arm and hand, are far less frequently the situations of the present disease. But although it is true, that the larger arteries are the most subject to the ordinary species of aneurisms, the smaller arteries seem to be more immediately concerned in the formation of one peculiar aneurismal disease, now well known by the name of the aneurism by anastomosis.

### *Causes.*

The causes of aneurisms operate either by weakening the arterial parieties or by increasing the lateral impulse of the blood against the sides of these vessels. It is said to be in both these ways that the disease is occasioned by violent contusions of the arteries, the abuse of spirituous drinks, frequent mercurial courses, fits of anger, rough exercise, exertions in lifting heavy burdens, &c. In certain persons aneurisms appear to depend upon a particular organic disposition.

Richerand affirms, that out of twelve popliteal aneurisms which he had seen in hospital or private practice, ten were caused by a violent extension of the leg.

In many instances it is difficult to assign any cause for the commencement of the disease. Among the circumstances which predispose to aneurisms, however, the large size of the vessels may undoubtedly be reckoned. Those trunks which are near the heart are said to have much thinner parietes, in relation to the magnitude of the column of blood with which they are filled, than the arteries of smaller diameter; and since the lateral pressure of this fluid against the sides of the arteries is in a ratio to the magnitude of these vessels, it follows that aneurism must be much more frequent in the trunks near the heart than in such as are remote from the source of the circulation.—(*Richerand, Nosogr. Chir.* t. iv. p. 72. 2d. ed.) The whole arterial system is liable to aneurism; but, says Pelletan, experience proves that the internal arteries are much more frequently affected than those which are external.—(*Clinique Chir.* t. i. p. 54.)

The curvatures of the arteries are another predisposing cause of the disease; and, according to Richerand, such cause has manifest effect in determining the formation of the great sinus of the aorta, the dilatation which exists between the cross and the origin of this large artery, and is the more considerable the older the person is: Monro even thought that one half of the old persons have an aneurism at the beginning of the aorta. And with respect to aneurisms in general, which are preceded by calcareous depositions, thickening, and disease of the coats of the vessel, they are most frequently met with

in persons of advanced age. Aneurisms from wounds are of course often seen in individuals of every age. In old people the coats of the arteries are subject to a disease which renders them incapable of making due resistance to the lateral impulse of the blood.

It was observed by Morgagni, that popliteal aneurisms occur with particular frequency in postilions and coachmen, whose employments oblige them to sit a good deal with their knees bent. In France, the men who clean out the dissecting rooms and procure dead bodies for anatomists, are said, almost all of them, to die with aneurismal diseases. Richerand remarks, that he never knew any of these persons who were not addicted to drinking, and he comments on the debility which their intemperance and disgusting business together must tend to produce.—(*Nosogr. Chir.* t. iv. p. 74. 2d. edit.) It may be produced by wounds, contusions, debility, &c.

### *Symptoms.*

The symptoms of a circumscribed true aneurism are as follows: the first sensation which the patient perceives, is an extraordinary throbbing in some particular situations, and on paying a little more attention, he discovers there a small pulsating tumour which disappears when compressed, but returns again as soon as the pressure is removed. The colour of the skin is not changed. The tumour now continues gradually to increase until it attains a very great size. There is beating, throbbing and pain. In proportion as it becomes larger, the pulsations are less distinct, or become weaker, sometimes they are entirely lost when the disease acquires a great magnitude.

The diminution of the pulsation has been ascribed to the coats of the artery losing their dilatable and elastic quality in proportion as they are distended and indurated, and, consequently, the aneurismal sac being no longer capable of an alternate diastole and systole from the action of the heart. The fact is also imputed to the coagulated blood deposited on the inner surface of the sac, particularly in large aneurisms, in which the motion of some of the blood is always interrupted. Immediately such coagulated blood lodges in the sac, pressure can only produce a partial disappearance of the swelling. This deposition of lamellated coagulum in the aneurismal sac is a circumstance of considerable importance; for it has been well explained by Hodgson, that it is the mode by which the spontaneous cure of the disease is in most instances effected. "One of the circumstances which, in the most early stage, generally attend the formation of aneurism, (says this author,) is the establishment of that process which is the basis of its future cure. The blood, which enters the sac soon after its formation, generally leaves upon its internal surface a stratum of coagulum, and successive depositions of the fibrous part of the blood gradually diminish the cavity of the tumour. At length the sac becomes entirely filled with this substance, and the deposition of it generally continues in the artery which supplies the disease, forming a firm plug of coagulum, which extends on both sides of the sac to the next important ramifications that are given off from the artery. The circulation through the vessel is thus prevented, the blood

is conveyed by collateral channels, and another process is instituted, whereby the bulk of the tumour is removed, &c.

As the tumour grows larger, the communication of blood into the artery, beyond the tumour, is lessened; hence, in this state, the pulse below the swelling becomes weak and small, and the limb frequently cold and swelled. The pressure of the tumour on the adjacent parts may also produce a variety of symptoms, such as inflammation, ulceration, absorption of bone, &c.

In the advanced stage of an aneurism, the skin is found extremely thin, and confounded, as it were, with the aneurismal sac. The cavities of the cellular substance near the disease, are either filled with serum or totally obliterated by adhesion. The adjacent muscles, whether they lie over the aneurism or to one side of it, are stretched, displaced, dwindled, and sometimes confounded with other parts. It is the same with the large nervous cords situated at the circumference of the tumour: they are pushed out of their natural situation, diminished in size, sometimes adherent to the outside of the sac, and so changed as scarcely to admit of being known again. Lastly, the cartilages and the bones themselves are not exempt from the mischief which the aneurismal swelling produces in all the surrounding parts: they are gradually destroyed, and at length not the least trace of their substance remains, just in the same way as the bones of the cranium are destroyed by fungous tumours of the dura mater. Even the cartilages of the larynx and rings of the trachea are sometimes destroyed; this tube is pierced, and the blood escapes into it, or the aneurism bursts into the œsophagus.—(*Boyer.*)

While an aneurism is small and recent, it does not generally cause much pain, nor seriously impede the functions of the limb. But when it has increased, several complications are produced. Thus, the dragging of the saphenous nerve, by femoral aneurisms, frequently occasions acute pain in the course of this nerve as far as the great toe. The distention of the sciatic nerve, by the popliteal aneurism, sometimes brings on intolerable pain, which extends to all the parts to which this nerve is distributed, and which can hardly ever be appeased by the topical use of opiate applications. The compression of the veins and lymphatics gives rise to swelling, numbness and coldness of the limb. And, finally, the long continued pressure of the aneurism on the neighbouring bones, causes their destruction.—(*Boyer*, t. ii. p. 105.)

In true aneurism, the coats of the artery are not always in the same state, the kind of changes observed depending upon the progress of the tumour. In the early stage of the disease, either the whole cylinder of the vessel, or only a part of its circumference, is dilated; but this period is generally of short duration, especially in arteries of middling size, because their middle coat is capable of less resistance than that of the larger arteries, like the aorta, where this coat is yellowish, firm, and very elastic. As Breschet remarks, this difference of resistance in the middle coat of the aorta and the branches given off from it, accounts for the rarity of true aneurisms either in the small arteries or those of middling size, and their greater frequency in the principal trunk of the arterial system.



At length, in consequence of the increasing distention, some of the coats of the artery possessing the least elasticity give way, and these are found to be the internal and middle coats, while the external one still makes resistance and continues to be more and more dilated by the lateral impulse of the blood.

The second stage of true aneurism is that which is mostly met with; that in which the tumour increases more rapidly, and therefore begins to excite greater attention. The disease, when it has attained this form, is in point of fact no longer a true aneurism, but a case which Monro distinguished by the name of the consecutive or external mixed false aneurism. In this stage the patient's life is endangered, and death often brought on by the rupture of the tumour. Examinations of the dead subject, under these circumstances, have frequently led to mistaken notions; and doubtless if various swellings of this kind had not been found in different degrees or stages in the same individual, one might be disposed to join Scarpa in the belief, that no aneurism consists of a dilatation of all the arterial coats.—(*Breschet, Fr. trans. of Mr. Hodgson's work*, p. 128, 129.)

The false aneurism is always attended with at least a rupture, or giving way of the inner coat of the vessel, and usually with a breach in both this and the muscular coat, the outer elastic tumour forming the pouch in which the blood collects. But after the swelling has attained a certain size, this coat also bursts, and then the blood either becomes diffused, or a large circumscribed space is formed for it by the condensation of the surrounding cellular membrane. False aneurisms, when produced by a wound or puncture, are of course, from the first, attended with a division of all the coats of the vessel. This form of the disease is often seen at the bend of the arm, where the artery is exposed to injury in venesection or bleeding. In this circumstance, as soon as the puncture is made, the blood gushes out with unusual force, and in a bright scarlet, irregular, interrupted current; flowing out, however, in an even and less rapid stream when pressure is applied higher up than the wound. These last are the most decisive marks of the artery being opened; for blood may issue from a vein with great rapidity, and in a broken current, when the vessel is turgid and situated immediately over the artery, which imparts its motion to it. The surgeon endeavours precipitately to stop the hæmorrhage by pressure, and in general a diffused false aneurism is the result. The external wound in the skin is closed, so that the blood cannot escape; but this does not hinder it from passing into the cellular substance. The swelling thus produced is uneven, often knotty, and extends upwards and downwards along the track of the vessel. The skin is also usually of a dark purple colour. Its size increases as long as the internal hæmorrhage continues, and if this should proceed beyond certain bounds, mortification of the limb ensues. Such is the diffused false aneurism from a wound.

The circumscribed false aneurism, from a wound or puncture, arises in the following manner. When proper pressure has been made in the first instance, so as to suppress the hæmorrhage, but the bandage has afterward been removed too soon, or before the artery has healed, the blood passes through the unclosed wound, or that which it has

burst open again, into the cellular substance. As this has now become agglutinated by the preceding pressure, the blood cannot diffuse itself into its cells, and consequently a mass of it collects in the vicinity of the aperture of the artery, and distends the cellular substance into the form of a sac. Sometimes, though not often, the circumscribed false aneurism originates immediately after the opening is made in the artery. This chiefly happens when the aperture in the vessel is exceedingly small, and consequently when the hæmorrhage takes place so slowly that the blood, which is first effused, coagulates, and prevents the entrance of that which follows into the cavities of the cellular substance, and of course its diffusion. False aneurisms, proceeding from the rupture of the inner coats of an artery, are always at first circumscribed by the resistance of the outer tunic.

The circumscribed false aneurism consists of a sac composed of the external coat of the artery; or, in case this has given way, it is composed of an artificial pouch, formed among whatever parts happen to be in the vicinity of the burst artery. This cavity is filled with blood, and situated close to the artery, with which it has a communication. Hence, in false aneurisms, a throbbing is always perceptible, and is more manifest the smaller such tumours are. The larger the sac becomes, the less elastic it is, and the greater is the quantity of laminated coagula in it; so that in very large aneurisms of this kind, the pulsation is sometimes wholly lost.

The tumour is at first small, and on compression entirely disappears; but returns as soon as this is removed. It also diminishes when the artery above it is compressed; but resumes its wonted magnitude immediately such pressure is discontinued. When there is coagulated blood in the sac, pressure is no longer capable of producing a total disappearance of the tumour, which is now hard. The swelling is not painful, and the integuments are not changed in colour. It continually increases in size, and at length attains a prodigious magnitude.

The following are generally enumerated as the discriminating differences between circumscribed true and false aneurisms: the true aneurism readily yields to pressure, and as readily recurs on its removal; the false one yields very gradually, and returns in the same way; and as it contains coagula, it cannot be reduced in the same degree by compression as an aneurism formed by a dilatation of the arterial coats, where such strata of coagulated blood are usually absent. Frequently a hissing sound is audible when the blood gushes into the sac. The pulsation of the false aneurism is always more feeble, and as the tumour enlarges, is sooner lost than that of the true one, which throbs after it has acquired a considerable volume.—(See *Richter's Anfangsgr.* b. i.

#### *Discrimination.*

Aneurismal tumours may be known by the pulsation being perceptible over every part; whereas, in tumours which derive their pulsation from being situated over an artery, it is only to be felt in the direction of the vessel.

Also, if the aneurism be recent, by pressing your finger on the artery which leads to the aneurism, you will empty the aneurismal bag; but if the aneurism be of long duration, and the pulsation is but slight, place yourself by the side of the patient, observe carefully the size of the swelling, and by pressing your finger on the artery above, you will see the aneurism sink down as you make the pressure, though the sac will not entirely empty itself; and upon raising your hand suddenly, you will observe a jet of blood rush into the aneurismal sac, and raise it to its former height.

The following are the principal or the most formidable aneurisms:

### *Aneurism of the Heart.*

An aneurism of the heart consists of a bag formed out of the parietes of that organ, and in this bag an opening is formed, as in aneurisms which take place in arteries.

In these unhappy cases, the only course you can adopt, is to enjoin quietude, with mild and moderate diet.—(Cooper.)

### *Aneurisms of the Aorta.*

Aneurisms of the aorta, are diseases of by no means unfrequent occurrence; and are, indeed, most truly to be dreaded, both by the surgeon and the patient.

No affliction, in fact, can be more deplorable; for, the sufferings which they occasion hardly ever admit of palliation, and the instances of recovery are so very few, that no consolatory expectations can be indulged of avoiding the fatal end to which the disease naturally hastens.

Aneurisms of the aorta vary in their situation; sometimes arising in one part, in other instances, at another; more frequently, however, at the arch of the aorta.—(Cooper.)

### *Popliteal Aneurism.*

Popliteal aneurism, as its name implies, is situated in the popliteal space of the ham; it is the most common external one, and is characterized by the symptoms lately drawn in illustration of external aneurisms.

### *Femoral Aneurisms.*

It is not an uncommon occurrence to meet with an aneurism of the femoral artery, just below Poupart's ligament.

### *Axillary Aneurisms.*

There may happen cases of aneurism in the axilla.

### *Carotid Aneurisms.*

Aneurisms of the carotid artery may undergo a spontaneous cure, without any serious consequences to the brain.

## Common Treatment.

The method now adopted in the treatment of aneurism, is to make an incision down to the artery, passing a ligature round, tying it, and then closing the lips of the wound. This is done to prevent the entrance of blood into the aneurismal sac. But from the effect of this operation, and from the various reports which have been detailed by those who have performed it, (I mean honest reports, for many I have found have been false,) I am led to doubt the propriety, or the utility of the operation. I find, by strict inquiry, that more cases even on record have been cured without an operation, or cured spontaneously by the natural efforts of the system, without the least medicine whatever, than have been cured by a surgical operation, or tying the artery. A large proportion of the cases where an operation has been performed, have proved fatal. Occasionally one has been reported which has proved successful. But even such, I find, has often been followed by the most serious, injurious, or fatal effects, such as mortification of the leg, scirrhus enlargement, stiffness, and permanent lameness.

Were I to give an account of the number of cases that have proved fatal by a surgical operation, the catalogue would indeed be frightful. My objections to the operation are as follow :

1st. The consequences arising from irritation or pain.

In some habits, and in some aneurisms, such a degree of pain or irritation is produced that the patient is carried off at the time, or shortly afterwards. In this city, some time ago, a woman died in about twenty-four hours after an operation for a femoral aneurism ; and numerous others might be mentioned.

2d. The second objection is the danger arising from hæmorrhage. The impetus of blood is so great after an artery has been tied, that sometimes hæmorrhage or bleeding takes place, and proves fatal.

3d. *Mortification of the Limb.*—If hæmorrhage does not immediately arise from the act of tying the artery, as soon as the ligature or ligatures cut through it, mortification often takes place, and carries off the patient.

4th. After the operation has been performed of tying the artery, even if no such effects follow as above mentioned, in consequence of the anastomosing branches not being sufficient to supply the limb with blood below the aneurismal tumour, or in consequence of the want of a due circulation, the temperature of the limb is diminished or reduced, mortification and sloughing takes place, and the limb or life of the patient is endangered or lost. This happened in this city in the case of a Mr. Parcells, who was operated upon for femoral aneurism by Dr. M——.

5th. Callus and stiffness of the limb.

Where an aneurism is situated upon any of the extremities, if the circulation is cut off by tying the artery for an aneurismal tumour, the whole limb frequently becomes not only œdematous and exceedingly swelled, but it likewise becomes stiff, indurated, and so permanently enlarged, that the use of it is entirely lost, and amputation



is proposed as the only remedy. This occurred in the case of Richard White, of Brooklyn, who was operated upon for a popliteal aneurism; and such deplorable consequences resulted from it, that amputation was proposed as the only alternative.

I objected to this operation, (for which I received a liberal share of abuse,) and after about nine months, succeeded so far in reducing the enlargement, and removing the stiffness of the limb, that he was enabled to walk without crutches, and he now attends to his ordinary business.

6th. I object to the operation, because it does not even in all cases prevent the blood from passing into the aneurismal sac, by which the pulsations and the tumour still continue in a greater or less degree.

7th. I object to the operation again, because nature alone effects more cures than are effected or performed by the operation.

8th. I object to it, because I have succeeded in curing it where an operation has been proposed as the only alternative to save life, and where a fatal event was predicted without such operation being performed, by a most distinguished operator of this city.

9th. I object to it, because the operation is not only uncertain in the event, but because it is excruciatingly painful, particularly under certain circumstances.

10th, and lastly. Because the operation may be resorted to, as an experiment, when all other means fail, or as the last alternative.

According to Scarpa, the circumstances chiefly preventive of success, especially in the popliteal and femoral aneurisms, are the following: Rigidity, atony, or disorganization of the principal anastomoses, between the superior and inferior arteries of the ham and leg; sometimes depending on an advanced age, or on it together with the large size of the aneurism, which by long continued pressure has caused a great change in the neighbouring parts; or sometimes on steatomatous, ulcerated, earthy, cartilaginous disorganization of the proper coats of the artery, not confined to the seat of the rupture, but extending a great way above and below the aneurism, and also to the principal popliteal recurrent arteries, tibial arteries, and, occasionally, to portions of the whole track of the superficial femoral artery. Sometimes the pressure of a large aneurism renders the thigh-bone carious. In such circumstances, the ligature is apt to fail in closing the trunk of the artery; and, if it should succeed, the state of the anastomosing vessels will not admit of a sufficient quantity of blood being conveyed into the lower part of the limb. Hence, when the patient is much advanced in life, languid and sickly; when the internal coat of the artery is rigid, and incapable of being united by a ligature; when the aneurism is of long standing and considerable size, with caries of the os femoris or tibia; when the leg is weak and cold, much swelled, heavy, and œdematous, Scarpa considers the operation contra-indicated.

I will now give a few cases that are before me, that have proved fatal in consequence of the operation.

CASE 1st. *Aneurism of the Carotid Artery, related by Sir Astley Cooper.*

The first case is that of Mary Edwards, aged 44. The swelling occupied two thirds of the right side of the neck, pulsated very strongly, and the integument at the most prominent part of the tumour appeared very thin. It had existed six months previous to the operation, which was performed as follows:—On November 1, 1805, I made an incision, two inches long, on the inner edge of the sterno mastoid muscle, from the inferior part of the tumour to the clavicle, which laid bare the omo and sterno-hyoideus muscles, which being drawn aside towards the trachea, exposed the jugular vein. The motion of this vein produced the only difficulty in the operation; as, under the different states of breathing, it sometimes presented itself to the knife tense and distended, and then as suddenly collapsed. Passing my finger into the wound, to confine that vein, I made an incision upon the carotid artery, and having laid it bare, I separated it from the par vagum, and introduced a curved aneurismal needle under it, taking care to exclude the recurrent nerve on the one hand, and the par vagum on the other. The two threads were then tied about half an inch asunder, being the greatest distance to which they could be separated: on account of the short space, I did not divide the artery. As soon as the threads were tied, all pulsation in the tumour ceased, and the wound was superficially dressed.

Immediately after the operation she was seized with a severe fit of coughing, which continued half an hour, when she became more tranquil, and slept six hours during the following night. She continued in a favourable state until the eighth, when it was observed that her left arm and leg were paralytic: she was restless, but had not any pain in the head. 9th. Could not swallow solids, and felt occasional pricking pain in the wound. 11th. Power of motion of the left arm returned, and she appeared going on favourably. 12th. The two ligatures came away with the intervening portion of artery. She went on well until the 17th, the tumour reducing, and the wound healing; when the wound again opened, the tumour increased and was painful; she had a violent cough, great difficulty in swallowing, and a high degree of constitutional irritation. From this time she gradually got worse, and died on the 21st.

CASE II.

Mr. Travers, in an operation which he performed for a popliteal aneurism in a sailor, in Nov. 1813. A double ligature was passed under the femoral artery. The ligatures were tied with loops or slip knots, about a quarter of an inch of the vessel being left undivided between them. All that now remained of the pulsation in the tumour was a slight undulatory motion. Nearly six hours having elapsed from the application of the ligatures, the wound was carefully opened, and the ligatures untied and removed without the slightest disturbance of the vessel. In less than half a minute afterward the artery became distended with blood, and the pulsations in the tumour were as strong as

they had been before the operation. Mr. Hutchison then applied two fresh ligatures ; hæmorrhage afterwards came on ; amputation was performed, and the patient died.—(See *Practical Obs. in Surgery*, p. 102.)

## CASE III.

The following cases were mentioned by Sir Astley Cooper. A man underwent the operation for aneurism ; the femoral artery was tied ; the pulsation ceased ; and the patient in a little while was supposed to be cured of the aneurism, and discharged. Upon his return to labour, however, a swelling arose in the ham, without pulsation. The swelling subsided in consequence of rest : but afterward, while the man was at work, the swelling returned with great pain. At length, as Sir Astley conceived that there was no prospect of the limb becoming useful again, it was amputated. Upon an examination of the parts, he found that the femoral artery, below the place of the ligature, had been conveying blood. It does now and then happen (says he) that a blood-vessel will arise from the artery close above the ligature, and pass into the artery immediately below it, by which means the circulation is produced. Sir Astley then referred to a specimen in the hospital museum, where this fact is illustrated in the brachial artery.—(See *Lancet*, vol. i. p. 298.)

## CASE IV.

Another example of the operation is reported in vol. xii. of the *Lancet*. The carotid was tied above the aneurism by Mr. Lambert, and Mr. Callaway, March 1st, 1827. On the third day, the tumour seemed much consolidated, and reduced in size. On the 10th day, there was some bleeding from the wound ; but it was suppressed by the application of a compress wet with cold water ; and in a few days, the swelling had entirely disappeared, and all that could be felt of it on pressing the finger deeply down, was a small hard tumour, having a very faint undulatory thrill. Unfortunately, this patient, also a female, fell a victim to hæmorrhage on the 1st of May, in consequence of ulceration extending.

## CASE V.

Another instance, in which the internal iliac artery was tied, was some time ago communicated to the public. The operation was performed by Mr. Atkinson, of York, on account of a gluteal aneurism. The following are a few of the particulars, as related by this gentleman :—Thomas Cost, aged 29, presented himself at the York County Hospital, April 29th, 1817. He was a tall, strong, active bargeman, not corpulent, but very muscular. He was enduring great pain from a large, rentent, pulsating tumour, situated under the gluteus of the right side ; an obvious aneurism. It had existed about nine months, and was the consequence of a blow from a stone. In a consultation with Dr. Lanson and Dr. Wake, the necessity of the operation was determined upon, and it was performed on the 12th of May, without any material difficulty or interruption. The artery being then tied, the pulsation of the swelling entirely ceased.

The patient went on tolerably well for some time after the operation; the pulse never exceeded 130, and after a time sunk to 85 or 90. He became exhausted, however, partly by the discharge, and partly by hæmorrhage, and died on the 31st of May, about nineteen days after the operation.

## CASE VI.

Dr. Jeffray, of Glasgow, was consulted in a case where the gluteal artery had been wounded. He urged the propriety of tying the vessel where it had been injured. This sensible advice was at first rejected, and when the friends at last consented, the operation was too late, as, while preparation was making for it, the tumour burst, and the patient expired in a few moments.

## CASE VII.

Thenden also mentions an instance in which the gluteal artery was wounded in the dilatation of a gun-shot wound, and the patient lost his life.—(See *Scarpa on Aneurism*, p. 407. 2d. edit.)

## CASE VIII.

Professor Gibson had occasion to put a ligature round the iliac, in an example of gun-shot wound. "The patient lived fifteen days after the operation, and then died from peritoneal inflammation, and from ulceration of the artery. The circulation in the limb of the injured side was re-established about the seventh day after the artery was tied."

*Axillary Aneurisms.*

Aneurisms occasionally take place in the axilla, and make it necessary to tie the subclavian artery. A question here naturally presenting itself is, whether the surgeon should attempt the operation in an early period of the disease, or wait till circumstances are urgent; the aneurism large and far advanced; the arm œdematous and insupportably painful, from the stretching of the axillary plexus of vessels; the patient worn out by suffering and loss of rest; and the tumour in danger of bursting? In all cases of aneurisms, unquestionably, there is a certain chance of the disease getting well spontaneously; and one axillary aneurism, in a man in St. Bartholomew's Hospital a few years ago, had certainly disappeared of itself, as was proved by the account which the patient, while living, gave of his case, and by the obliteration of the artery, found on inspection after death.

## CASE IX.

Mr. Hunter's second operation for internal aneurism, was on a trooper. Instead of using several ligatures, which were found hurtful, he tied the artery and vein with a single strong one; but unluckily the experiment was made of dressing the wound from the bottom, instead of attempting to unite it at once; and the event was, that the man died of hæmorrhage.



## CASE X.

The operation of tying the artery below the tumour was repeated by Sir A. Cooper, not for an aneurism of the femoral artery in the groin, but for an aneurism of the external iliac, where tying the artery above the swelling was impracticable. The femoral artery was therefore tied immediately below Poupart's ligament, between the origins of the epigastric and the profunda. The pulsations of the tumour continued ; but the progress of the disease was checked. After a time, indeed, the swelling decreased, and this in so considerable a manner, that hopes began to be entertained that perhaps the external iliac artery might soon admit of being tied above the disease. The ligatures came away without any unfavourable occurrence, and when the wound was healed, the patient was sent into the country for the benefit of the change of air. Afterward, however, the tumour gave way ; an extravasation of blood took place in the abdomen and cellular membrane of the pelvis, and the patient died.

## CASE XI.

December 10, 1826, Mr. Wardrop attempted a similar operation for the cure of a carotid aneurism in another woman, aged 57. Some reduction of the throbbing, and other relief, are stated to have ensued ; but the patient died of a complication of complaints on the 23d of the following March, 1827. " Up to the day of her death, a tumour remained in her neck of about the bulk of an almond, which pulsated strongly, felt very thin in its coats, and its contents could be readily squeezed out of it, but returned rapidly, when the pressure was removed."—(p. 33.) In the dissection, it deserves notice, that the carotid was found completely pervious, and that no cicatrix nor other appearance, enabled Mr. Bennet to ascertain the precise point to which the ligature had been applied.—(p. 35.)

## CASE XII.

Mr. C. Bell met with a case in which the femoral artery divided below the profunda into two equal branches, the most superficial of which was alone noticed and tied in the operation. The patient died of constitutional disturbance, arising from inflammation in the whole course of the sartorius.

## CASE XIII.

Mr. Vincent tied the carotid trunk for an aneurism. A single ligature was applied ; the pulsation in the tumour did not entirely cease, at first, when the artery was tied, but it did so two days afterward ; and the swelling was rapidly diminishing. The ligature came away about three weeks after the operation, and there was every hope of a cure ; but, between the fourth and fifth week, a considerable swelling occurred between the wound and the jaw, impeding deglutition, but not the breathing. This state was followed by febrile symptoms, increased difficulty of swallowing, an attack of coughing, and impeded respiration. In the hope of affording relief, an incision was made in the tumour, from which a small quantity of pus and coagulum issued ; but it was in vain, for the patient was dying.

## CASE XIV.

John Townly, a tailor, aged thirty-two, addicted to excessive intoxication, of an unhealthy and peculiarly anxious countenance, was admitted into St. Bartholomew's hospital on Tuesday, the 2d of November, 1809, on account of an aneurism in the right axilla. Immediately the artery was tied, the pulsation of the swelling ceased; the arm of the same side continued to be freely supplied with blood, and was even rather warmer than the opposite arm. The operation, which was severe from the length of time it took up, was, after a time, followed by considerable indisposition. The patient died about five days after its performance. After the artery had been tied, the œdema of the arm and the aneurismal tumour partly subsided; and, on examination after death, nothing but the vessel was found included in the ligature.

## CASE XV.

In Dr. Colles's first case, the artery was tied before it reached the scaleni muscles, as the tumour, which was in the right subclavian artery, extended from the sternal origin of the sterno mastoid muscle along the clavicle, a little beyond the arch of that bone, and rose nearly two inches above it, in a conical form, the apex of the cone being situated at the outer edge of the foregoing muscle. After a tedious dissection, it was found that only a quarter of an inch of the artery was sound, and on this portion the ligature was placed. Great difficulty was encountered in passing it round the artery, and the pleura was supposed to have been slightly wounded. Before tightening the ligature the breathing became laborious, and the patient complained of oppression about the heart. These symptoms, indeed, were so violent, that it was judged prudent not immediately to tighten the ligature. On the fourth day, however, the artery was constricted, when the pulse at the wrist ceased, the patient not seeming to suffer much from what had been done. The patient then went on pretty well till the ninth day, when he was seized with a sense of strangling, and pain about his heart, and, becoming delirious, died nine hours after the beginning of this attack. On dissection, the aorta was found diseased, and the disease extended into the subclavian artery.

In another instance, Dr. Colles tied this vessel at the point where it emerges from between the scaleni muscles, without any particular difficulty. The operation, however, was soon followed by a train of severe symptoms, delirium and mortification, and the patient died on the fifth day.—(See *Edin. Med. and Surg. Journ. January, 1815.*)

With respect to tying the subclavian artery on the tracheal side of the scalenus, we have seen, that it was performed by Dr. Colles, and the event was fatal. Descriptions of the operation may be found in Mr. Hodgson's work, p. 382.

## CASE XVI.

Mr. Abernethy was under the necessity of tying the trunk of the carotid, in a case of extensive lacerated wound of the neck, where the

internal carotid and the chief branches of the external carotid were wounded. The patient at first went on well: but in the night he became delirious, and convulsed, and died about thirty hours after the ligature was applied. This case fell under my own notice, and the inference which I drew was, that the man died more from the great quantity of blood which he lost, and the severe mischief done to the parts in the neck, than from any effect of the ligature of the artery on the brain.

## CASE XVII.

In another instance in which the common carotid was tied, on account of a wound of the external carotid by a musket ball, complicated with fracture of the condyle and coracoid process of the lower jaw, every thing went on favourably until the 7th day after the operation. Neither the intellectual faculties nor the functions of the organs of sense had been at all disturbed. But at that period, stupor, confusion of ideas, restlessness, a small unsteady pulse, discolouration of the face, and loss of strength came on, followed in the evening by a violent paroxysm of fever. On the eighth day three copious hæmorrhages took place from the whole surface of the wound, and on the ninth the man died.—(See *Journ. Général de Med. &c. par Sedillot.*)

## CASE XVIII.

Scarpa mentions one unfortunate patient who was killed by a knife being plunged in a carotid aneurism, on the supposition that the case was an abscess.

## CASE XIX.

Deschamps tied the femoral artery below an inguinal aneurism; but the progress of the disease, instead of being checked, seemed to be accelerated by the experiment. The operator was obliged, as a last resource, to open the tumour, and try to take up the vessel. In this attempt the patient lost a large quantity of blood, and died eight hours afterward.

## CASE XX.

Dr Mott operated upon a person, on the 11th of June, 1818, in the New-York hospital, for a subclavian aneurism. On the twenty-third day, hæmorrhage came on from the wound: it was stopped by the introduction of lint, and the employment of pressure. About twenty-four ounces of blood were lost, whereby the patient was so depressed that the pulse was no longer distinguishable. On the twenty-fourth day, in the evening, he lost four ounces more blood; on account of his restlessness and the painful state of his arm, two grains of opium were administered to him. After one or more returns of bleeding, he died on the twenty-sixth day.

## CASE XXI.

The *arteria innominata* was tied by Græfe, in the hospital at Berlin, on the 5th of March 1622, on account of a subclavian aneurism. The carotid was exposed and traced down to the innominata, to which a ligature was applied by means of a blunt tenaculum constructed for the purpose, the vessel being tied at most about an inch from the curvature of the aorta, and two inches from the heart. As soon as the

ligature was tightened, the pulsation of the arteries of the right arm, right carotid, and right temporal artery ceased; at the same instant the throbbing of the aneurism stopped, and the tumour became flaccid. The constriction of the cord produced no disturbance of any function. The patient went on so well for several weeks afterward, that no doubt was entertained of his recovery. However, when the wound was nearly healed, hæmorrhage came on, and though it was suppressed, and hope began to be again indulged, the bleeding recurred, and the patient died on the sixty-seventh day.—(See *Journ. der Chirurgie*, von C. F. Græfe, and Ph. v. Walther, b. 3. p. 596, &c., b. 4. p. 587.)

The example in which the carotid was tied by Dr. Fricke, in the hospital at Hamburg, for the cure of a diseased parotid, is reported in the *Lancet*, No. 182. Some diminution of the swelling, and increased power of swallowing, followed; but suppuration took place, and the case ended fatally.

The limits of this work will not permit me to insert more cases which have proved fatal. Nearly all these were selected from *Cooper's Surgical Dictionary*. I might, were it necessary, give a sufficient number to constitute a volume. Some might wish us to insert some cases in which an operation has proved successful, but these, in the first place, are very scarce, or difficult to find, and in the next place, when any such do occur, they are so emblazoned abroad, that others are induced to perform the operation so frequently that much injury is the consequence of it.

#### *Of the Spontaneous Cure and General Treatment of Aneurisms.*

The obliteration of the sac in consequence of a deposition of coagulum in its cavity, as Hodgson has well described, is the mode by which the spontaneous cure of aneurism is in most instances effected. The blood soon deposits upon the inner surface of the sac a stratum of coagulum; and successive depositions of the fibrous part of the blood by degrees lessen the cavity of the tumour. At length, the sac becomes entirely filled with this substance, and the deposition of it generally continues in the artery on both sides of the sac as far as the giving off of the next large branches. The circulation through the vessel is thus prevented; the blood is conveyed by collateral channels; and another process is instituted, whereby the bulk of the tumour is removed.—(On the Diseases of Arteries, &c. p. 114.) Such desirable increase of the coagulated blood in the sac is indicated by the tumour becoming more solid, and its pulsation weak or ceasing altogether.

Another mode, in which the disease is spontaneously cured, happens as follows: an aneurism is sometimes deeply attacked with inflammation and gangrene; a dense, compact, bloody coagulum is formed within the vessel, shutting up its canal, and completely interrupting the course of the blood into the sac. Hence, the ensuing sphacelation and the bursting of the integuments and aneurismal sac are never accompanied by a fatal hæmorrhage; and the patient is cured of the gangrene and aneurism, if he has strength sufficient to



bear the derangement of the health necessarily attendant on so considerable an attack of inflammation and gangrene.

When a patient dies of hæmorrhage, after the mortification of an aneurism, it is because only a portion of the integuments and sac has sloughed, without the root of the aneurism, and especially the arterial trunk, being similarly affected. For cases illustrative of this statement, refer to *Hodgson on Diseases of Arteries*, p. 103, &c.

A third way, in which an aneurism may be spontaneously cured, is by the tumour compressing the artery above, so as to produce adhesion of its sides, and obliteration of its cavity. This mode of cure must be uncommon: it has been adverted to by Sir E. Home, Scarpa, Dr. John Thomson and others; but some facts, tending to prove it, have been collected by Mr. Hodgson, and are published in his useful work.—(See p. 107, &c.)

The treatment of aneurism (says Mr. Hodgson) consists in the obliteration of the cavity of the artery communicating with the sac, so that the ingress of the blood into the latter is either entirely prevented, or the stream which passes through it is supplied only by anastomosing branches, and consequently the force of the circulation is so much diminished, that the increase of the tumour is prevented, and the deposition of coagulum is promoted. By the absorption of its contents, and the gradual contraction of the sac, the cure is ultimately accomplished. The blood is conveyed to the parts, which it is destined to supply, by collateral vessels, some of which, being gradually enlarged, constitute permanent channels for the circulation. The obliteration of the artery is effected by the excitement of such a degree of inflammation in its coats as shall produce adhesion of its sides.

I will now mention a few spontaneous cures of aneurism, by way of contrast.

#### CASE I.

Patients should know that this disease, says Cooper, sometimes undergoes a spontaneous cure, for it is a great consolation for them to know this. I have known many examples of this change in aneurism, and will relate one of the most striking: George Bowie was admitted into Guy's hospital, with an aneurism in the groin. When the aneurism had acquired considerable magnitude, as he was sitting by the fire in his ward, he suddenly felt a snap in the swelling; his leg and thigh became immediately swollen and useless, and the patients assisted him into bed. The pulsation in the swelling continued for four days, and then ceased; the swelling of the limb gradually subsided, and four months afterwards he was able to walk, with scarcely any lameness: I met him one day in the square of the hospital, and, asking him how he was, he said, "Sir, I am pretty well of my old complaint, but I have got something alive in my inside;" and upon applying my hand to his abdomen, I found a pulsating tumour. He died from the bursting of this aneurism into the abdomen. I examined him, and we have the parts preserved in the museum of St. Thomas's hospital. The aneurism of the thigh had burst under the fascia lata, and the accumulated blood pressed the aneurism on the femoral artery, so as to interrupt the circulation. Both the iliac and

upper part of the femoral artery were obliterated, and the blood found its course by the internal iliac vessels.

I have seen spontaneous cures of aneurism produced without any circumstance which would readily explain the cause: one case with Sir William Blizard, at Walworth; a case of popliteal aneurism; and another of popliteal aneurism in Guy's hospital. Mr. Ford has published cases of this description; and Dr. Baillie has met with similar instances. I once saw, in Guy's hospital, a man who had an aneurism in the thigh, which had existed several years; which still retained its pulsation, but had ceased to increase, although it had not diminished: this man died of some other disease; and, upon examination, I found it to be aneurism produced by the general dilatation of the coats of the artery.

#### CASE II.

From a foreign periodical, entitled, *Medical Facts and Observations*. By George Wilkinson, Surgeon.

A tall, muscular man, about fifty years of age, was unfortunate enough to have the artery wounded in the opening of the basilic vein, in June, 1788. After a very large quantity of blood had escaped *per saltum*, a considerable degree of pressure was made on the orifice, and the blood was staid. There was an ecchymosis that extended from the shoulder to the wrist. A tumour, which had a strong pulsation in it, immediately began to be formed, and continued to increase till it equalled the size of a common cricket ball, and the limb at the same time grew (to use his own words) painfully lifeless.

It had been told him that nothing but an operation could give a chance of preserving his arm; but as he had formerly lived near Petworth, and had been a patient of mine, he chose to show me the case before he came to a determination concerning it.

When I saw him, it was about six months after the accident had happened, and I received from him the above account.

On examination, I found the tumour very nearly as he had described it, somewhat less indeed than a cricket ball, but hard, and with a strong pulsation in it. The arm was shrunk and cold, and the wrist entirely pulseless.

The patient having repeatedly assured me that the tumour had been somewhat larger, and the pulsation still stronger, I did not hesitate to dissuade him from the operation, at least for the present.

I recommended the constant use of the flesh brush only to the whole arm, and desired to see him regularly every fortnight.

Within a few weeks the arm grew a little warm; in about three months I could perceive a tremulous kind of motion at the wrist; the tumour very gradually diminished in size, its pulsation grew weaker, and the motion at the wrist stronger in the same proportion; the hardness of the tumour likewise increased as the tumour itself became less, so that when it was diminished to the size of a small apple, it was perfectly incompressible: indeed in this situation it was so long stationary, that I began to doubt whether it would ever vary from it; but within the last eight or nine months even this extreme hardness has gradually abated, and the decrease gone on, till the tu-

mour is become no larger than a full-sized hazel-nut, and not harder than a steatoma. The pulse too is now as strong in that arm as in the other; the arm itself is as large, and the power of using it, unless on very laborious occasions, (which he is cautioned to avoid,) nearly equal.

It is too evident to admit of any doubt that the circulation is principally carried on in its usual course through the artery, and not through the capillary and anastomosing branches of it.

This case may perhaps be thought to add some little weight to two of the conclusions drawn by Mr. Ford in his excellent paper on the same subject, "that nature is capable of effecting the cure of aneurisms solely by her own efforts, and that the cure by nature is a permanent one:" but although I am unable to form a satisfactory idea of the manner in which nature has so completely effected the cure in the present instance, I still hope the case may not be altogether unworthy of regard; for I confess myself of Mr. Watson's opinion, that the history of the disease is not complete, and that every aneurismal tumour will be found to have its peculiarities, and of course may afford useful information.

#### CASE III.

##### *Aneurism cured by Valsalva's method.*

[Translated from the Quebec Medical Journal, No. 5, for 1827.]

Miss Antouard, aged 18 years, enjoying good health, on the 18th of June, 1825, received a stab with a dagger, which wounded the left carotid artery below the superior extremity of the sternum, the instrument having been directed inwards and downwards. A very large quantity of blood was immediately diffused in the cellular tissue of the lateral and anterior part of the neck. She swooned away on the spot. The fourth day afterwards, this mass of blood was almost entirely absorbed, but an aneurismal tumour made its appearance at the border of the sternum. Dr. Souchier saw the patient a month after the accident, and the tumour was then as large as the lady's two fists. The pulsations were nearly equal throughout every part of the tumour excepting opposite the orifice of the artery. The tumour caused no other inconvenience than that which resulted from its weight, which gave rise to a continual headach.

Dr. Souchier, finding it highly imprudent to have recourse to an operation, owing to the heat of the season, and especially on a tumour situated so deep under the sternum, therefore he determined to put in practice the following principles:

1. To diminish the quantity of the blood, and consequently its stimulating action on the heart; thus diminishing its projectile force, checking the rapidity with which the blood escaped through the orifice of the artery, and causing a continual vibration of the walls of the tumour, which was an obstacle to the coagulation of the blood within the tumour.

2. To second this effect, by general and local bleeding, by the use of cold, by pressure, and, most of all, by digitalis. The force of the circulation being thus diminished, a coagulation would take place, and perhaps a complete cure.



Miss Antouard willingly submitted to this treatment, and he prescribed, 1st. Rice water acidulated with lemon juice, and an infusion of mallows. This was all the drink and nourishment he allowed. 2d. Frictions over the abdomen and inside of the thighs morning and evening, with eight grains of fol. digitalis, previously pulverized, and macerated twenty-four hours in a sufficient quantity of saliva. 3d. The application of twelve leeches every day close to the tumour; and afterwards, to procure a greater discharge from their bites, by means of emollient fomentations. The tumour was also to be covered with bandages dipped in a cold solution of acetate of lead, renewed frequently, so that their temperature should always be below that of the skin. 4th. To augment the pressure on the tumour with the bottom of a tumbler, held by the hand of an assistant. 5th. Lastly, absolute rest and silence.

Aug. 2, 1825. Fourth day of treatment. The pulsations of the tumour are more central.

Aug. 12. The volume of the tumour diminished to three fifths of its original size.

Aug. 18. The tumour is no longer visible; the pulsations, nevertheless, discernible; the skin thickened over the tumour; pulse fifty.

Dr. Souchier revisited his patient fifteen days after. It required an expert hand to distinguish in what place the artery was cicatrized, there being but a very small elevation on the artery. The pulses forty-eight, extreme hunger, and the remedies have become disagreeable, some of which are suspended, and she is permitted a little fruit and a piece of chicken, besides her ordinary diet. The digitalis is reduced to twelve grains per day; compression, silence and moderate exercise are prescribed. The catamenia returned at the expiration of twenty days after their cessation, and in greater abundance than at the first time.

A month after, no trace of a tumour could be discovered. The young lady, by degrees, took a little more exercise and nourishment, without experiencing any inconvenience, and finally ceased using any remedies. In last December and January, she felt neither pain nor inconvenience about the part where the tumour was situated; and the union of the sides of the artery was regarded as complete.

#### CASE IV.

Petit mentions that the advocate Vieillard had an aneurism at the bifurcation of the right carotid, for the cure of which he was ordered a very spare diet, and directed to avoid all violent exercise. Three months afterward the tumour had evidently diminished; and at last it was converted into a small, hard, oblong knot, without any pulsation. The patient having died of apoplexy seven years afterward, the right carotid was found closed up and obliterated from its bifurcation, as low down as the right subclavian artery.—(*Acad. des Sciences de Paris*, an. 1765.) Haller dissected a woman whose left carotid was impervious.—(*Opuscula Pathol.* obs. 19. tab. 1.) An example of the total closure of both carotids in consequence of ossification, is stated by Koberwein, to be recorded by Jadelot.



## CASE V.

Whenever the ulcerated, lacerated, or wounded artery, says Cooper, is accurately compressed against a hard body like the bones, it ceases to pour blood into the surrounding cellular sheath, because its sides, being kept in firm contact, for a certain extent above and below the breach of continuity, become united by the adhesive inflammation, and converted into a solid ligamentous cylinder. Molinelli, Guattani and White, have given examples and plates illustrative of this fact. When aneurisms get well spontaneously, the same fact is observed after death, as Valsalva, Ford, &c. have demonstrated. I have myself seen, in St. Bartholomew's hospital, an instance in which a man had had a spontaneous cure of an aneurism in the left axilla, but afterward died of hæmorrhage from another aneurismal swelling under the right clavicle: the artery on the left side was found completely impervious. My friend Dr. Albert had under his care, in the York hospital, Chelsea, a dragoon, who recovered spontaneously of a very large aneurism of the external iliac artery: the tumour sloughed, discharged about two quarts of coagulated blood, and then granulated and finally healed up. Paoli relates a similar termination of a popliteal aneurism. Moinichen and Guattani relate other examples. Hunter found the femoral artery quite impervious and obliterated at the place where a ligature had been applied fifteen months before. Boyer noticed the same fact in a subject eight years after the operation. Petit describes the spontaneous cure of an aneurism at the bifurcation of the right carotid: the subject having afterward died of apoplexy, the vessel, on dissection, was found closed up and obliterated, from the bifurcation as far as the right subclavian artery. Desault had an opportunity of opening a patient, in whom a spontaneous cure of a popliteal aneurism was just beginning: he found a very hard bloody thrombus, which extended for three finger-breadths within the tube of the artery above the sac, and was so firm as to resist injection, and make it pass into the collateral branches.

## CASE VI.

Popliteal aneurisms, as well as other external tumours of the same nature, stand the best chance of a spontaneous cure, when any cause induces a general, violent and deep inflammation all over the swelling; for then the communication between the sac and the artery is likely to become closed with coagulating lymph, and the pulsation of the tumour to be suddenly and permanently stopped. If in this state the disease sloughs, and the patient's constitution holds out, the coagulated blood in the sac and the sloughs are gradually detached, leaving a deep ulcer, which ultimately heals. An example, in which a popliteal aneurism was cured by such a process, is related in the *Trans. for the Improvement of Med. and Chirurgical Knowledge*, vol. ii. p. 268.

## CASE VII.

A celebrated case, says Cooper, completely established the important fact, that simply taking off the force of the circulation is sufficient to cure an aneurism, as the tumour is afterward diminished and removed by the action of the absorbent vessels.

In order to confirm the same fact, Sir E. Home related a case of femoral aneurism which got well without an operation, but on a similar principle to what occurs when the artery is tied. A trial of pressure had been made without avail. The tumour became very large, and such inflammation took place in the sac and integuments that mortification was impending: no pulsation could now be felt in the tumour, or the artery above it. The correct inference of Sir E. Home was, that a coagulum, which we know always occurs in an artery previously to mortification, seemingly to prevent bleeding, had formed in this instance, and in conjunction with the effusion of coagulable lymph about the root of the aneurism, had kept the blood from entering the sac.

## CASE VIII.

Pelletan also cured a large axillary aneurism, which was deemed beyond the reach of operative surgery. On the thirteenth day, the patient was reduced to a degree of weakness which alarmed many of the observers. From that time, all pulsation in the tumour ceased. The contents were gradually absorbed; and the patient returned to his former laborious life with his arm as strong as ever. The pulse at the wrist was lost in consequence of the obliteration of the axillary artery, and the limb only receiving blood through the branches of the subclavian artery.

## ADDITIONAL CASES.

Pelletan records the cure of one popliteal aneurism by compression and absolute repose during eleven months. (t. i. p. 115.) Boyer relates two instances. (*Traité des Mal. Chir.* t. ii. p. 204.) One is mentioned by Richerand. (*Dict. des Sciences Méd.* t. ii. p. 96.) The practice of Dubois is said to have furnished several examples of the same success; (vol. cit. p. 97.) and a case, in which Dupuytren effected a cure by compressing the femoral artery by means of an instrument applied just above the place where the vessel perforates the tendon of the triceps muscle, is detailed by Breschet.—(*Fr. trans. of Mr. Hodgson's work*, t. i. p. 249, &c.)

Two cases of aneurism are reported by a surgeon in Baltimore, which were cured by the efforts of nature alone, the particulars of which I am unable now to give.

Mr. H——, a methodist minister, of New Jersey, called upon me some years ago, with an aneurism of the carotid artery. He was not disposed at that time to have any thing done for it, and although the tumour was large, the pulsations great, accompanied with very unfavourable symptoms, which threatened the most imminent danger, still it gradually grew better, and I believe he is now well.

There are cases of this kind, or spontaneous cures of aneurism, to fill a volume; but it is unnecessary to insert any more. I think it must appear evident, that, even admitting that medical treatment avails nothing in the disease, that more reliance is to be placed upon the powers of nature alone, or that more cures are performed by it, than by a surgical operation, or tying the artery above the tumour.

If, then, the evidence preponderates against the operation for aneurism, and in favour of the efforts of nature alone, how much more does

it preponderate against it, when we take into consideration the additional prospect of a cure by aiding her salutary efforts? The balance appears to me to be in favour of dispensing with the knife, when I take into view, the danger and uncertainty of the operation, and the great probability of curing the disease by the combined aid of nature and art.

I shall now give the treatment which I pursue in cases of aneurism. Although the resources of nature are very great in curing all complaints, I wish it not to be understood that art is incapable of aiding her salutary efforts. It is our duty carefully to watch her progress, and, when her struggles are ineffectual, to assist her. And this is particularly applicable to aneurisms of all kinds. The first attempt should be to cure the disease by compression. This has succeeded in some instances, particularly when the tumour is small and compressible; but when very large, I have found it to aggravate the symptoms. Pressure may be applied in any convenient manner. When an aneurism is upon a limb, a piece of lead, bone, ivory, or wood, may be covered with linen, and laid directly over the artery above the tumour, and secured by a bandage, to be compressed as much as the feelings of the patient will permit. The tourniquet may be used for this purpose, or any other suitable contrivance, which will operate without retarding the return of blood through the veins.

This will sometimes effect a cure, by exciting adhesive inflammation in the walls of the aneurismal sac, by which it will be removed. Or it may be cured by the coagulum, which is produced in consequence of such pressure.

In order that pressure may succeed, the coats of the vessel at the place where it is made must be sufficiently free from disease to be susceptible of the adhesive inflammation. When the arterial coats around the root of the aneurism are much diseased, Scarpa considers them as insusceptible of the adhesive inflammation, although compressed together in the most scientific manner, and even when tied with a ligature, which only acts by making circular pressure on the vessel.

During this process, a suitable course of regimen must be pursued, and such medicine taken as is calculated to prevent inflammation.

Another method has been practised in some cases with success, the credit of which has been given to Valsalva, and one interesting cure is detailed in this chapter, which proved successful by following his directions. It consists in moderating the force of the circulation by low diet, bleeding, laxative medicines and opiates. A number of successful cases, treated in this way, are also on record. Aneurisms within the thorax and abdomen, acknowledged to be without the reach of operative surgery, have been cured by this treatment, or rather, perhaps, by the efforts of nature.

When, by these or similar means, the tumour continues to enlarge and grow worse, it is then that we must rely almost exclusively upon the resources of nature, and a vigorous antiphlogistic course of treatment. It is upon this principle or treatment that we must depend for the cure.

1st. The patient must be freely purged, and to be repeated two or



three times a week. The common physic, combined with a little *cream of tartar*, is the best preparation to give.

**2d. Sudorifics.**—As there is much inflammation usually attending the complaint in its most aggravated form, moderate perspiration will be necessary, to lessen the heat and pain, or to moderate the violence of arterial action. An *opiate* may be combined with a *sudorific* or diaphoretic, for which give the *diaphoretic powders*. But where the pain becomes excruciating, as is the case in some species of aneurisms, it becomes necessary to give powerful anodynes. An *opium pill*, containing three or four grains, is scarcely sufficient to mitigate the pain. The black drop is a good preparation of opium, and it must be given in doses according to the urgency of the symptoms.

**Local applications.**—The tumour may be bathed with the discutient ointment two or three times a day, after which apply the following :

Take *wormwood* and *hops* ;

Simmer in *vinegar* ; apply *cool* over the swelling, and often renew.

If it be a femoral aneurism, and the limb is very much swelled, let it be fomented with the same.

The feet should also be bathed in warm ley-water, once or twice a day. If it be cold, which is often the case for want of circulation, let it be steamed over *bitter herbs*, and let frictions be applied with the hand occasionally.

While these applications prove beneficial, let them be continued. But, if there is no improvement in the aneurismal tumour, apply a poultice made of the *slippery-elm bark* and *weak ley*. At the same time, administer from twenty to twenty-five drops of the tincture of *digitalis*, four or five times a day, in any kind of tea. Let the patient take freely of infusions, or teas, of *mint*, *catnip* and other diluent drinks. They aid very much in reducing inflammation by their *diuretic* and *diaphoretic* properties. I have applied cups over the aneurismal tumour and in its vicinity, where the pain, swelling, and inflammation has been very great, and I think with some advantage. As regards general blood-letting, I have no evidence that it possesses any control over the disease.

Where it is necessary to give *opiates* to allay the irritation, it may be necessary to give injections or clysters to evacuate the bowels.

**Position.**—The patient must be kept in a recumbent and quiet position, and if it is on an extremity, the limb must be a little flexed, turned outwards, and made to rest upon a pillow.

**Diet.**—Nothing stimulating must be taken internally, as regards food or liquids. The diet must be spare, and principally vegetable. In short, all the ordinary means for subduing inflammation must be promptly and rigidly adhered to ; for I conceive that art, in this disease, can do very little besides. Our reliance, in other respects, must be upon the resources, or powers of the system.

After this course has been continued for some time, there will often be an audible *snap* or *report*, sometimes almost as loud as a pistol, (to use the expression of a patient,) when instantaneously the beating and pain will cease, the swelling and inflammation subside, and gradually diminish, until there is nothing left except a cartilaginous tumour directly over the artery, which becomes, no doubt, obliterated.



Now it is a very interesting inquiry, to know in what manner a cure is thus effected. It appears to me, that after inflammation has existed a certain length of time, the external coat of the artery, or rather the cellular sheath of it, which forms a portion of the aneurismal sac, ulcerates, or is ruptured from the impetus of the blood, which is then diffused into the cellular substance, and subsequently taken up by the absorbents, while, at the same time, coagulated blood is formed in the tumour, and finally obliterates its cavity; the circulation being carried on below the tumour, by the anastomosing branches, or the lateral blood-vessels, as in amputation.

Should this theory be correct, the idea would occur to us that, in imitation of nature, we might expedite the cure, by rupturing the artery with a probe, or passing a seton through it, on the same principle that a ganglion is destroyed by bursting its sac. I, however, leave this for the reflection of others.

I have thus given my treatment for different species of aneurism, and I conceive that there is less danger in pursuing it, and a greater probability of effecting a cure, than by a surgical operation, or tying the artery. I will not, however, say that such operation should never be performed, although I am led to doubt the propriety of it, both from experience and observation; and should the ordinary treatment be found preferable to this, I trust that I shall have the magnanimity to acknowledge and adopt it. I wish to advance nothing that will not bear me out by facts. I must, therefore, leave the subject to be investigated and tested by those who have candour and honesty enough to do it.

In concluding this chapter, I will relate an interesting case of femoral aneurism, which will serve to illustrate the principle of treatment here laid down.

Mrs. Grant, aged about forty, then residing in Reed-street, in this city, was attacked with a throbbing and beating sensation in the thigh, just below the groin, and over the femoral artery. It gradually increased for several weeks, until the tumour became very great, and the whole leg exceedingly swollen and enlarged. The pulsations were very great, and the tumour almost lost in the surrounding parts; extremely hard, and excruciatingly painful. The whole thigh, from the groin to the knee, and particularly the upper portion of it, assumed a very morbid and diseased state. The circulation was carried on very feebly below the tumour, which rendered it very cold. She was now confined to the bed, and such was the pain attending it, that she took an ounce of laudanum during each night to procure relief. I was called to attend her soon after its commencement, and so formidable was it, that there appeared to be very little chance or prospect of recovery. It appeared, too, that if an operation was performed, and the artery tied, it must inevitably prove fatal, and I had not much confidence that any thing that I could prescribe would prove effectual; I was, therefore, at a loss to know what course to pursue. I took a physician, or surgeon, to examine the limb, who immediately proposed an amputation, to save the patient's life. About this time, one of the neighbours requested Dr. Mott, of this city, to examine the disease, who, upon finding it an aneurism, immediately proposed an

operation, without which, he said, she could not live. To this, the woman objected, and said, "the knife should never enter her flesh," let the consequences be what they might.

Taking every thing into consideration, the objections of the patient, and the danger and uncertainty of the operation, I concluded that it would be more prudent and safe to rely upon nature, aided by suitable means, than to rely upon such operation. It appeared to me that the chance of her recovery would be greater, and I therefore concluded to abandon it, and wait the result. But when Dr. Mott found that both myself and the patient were not disposed to take his advice, so anxious was he to try the experiment of tying the artery, that he employed another surgeon, and one or two private citizens, one of whom was a minister of the gospel, to wait upon the patient, and to inform her that except she submitted to the operation, it would certainly kill her. She replied, that she was getting better under the prescriptions of her present physician, and that she should not discharge him. Accordingly, after this, I was permitted to treat the case without further interference or molestation.

My applications were the same as before mentioned, with the addition that, a part of the time I applied the leaves of stramonium the whole length of the leg, to assist in reducing the swelling and inflammation. I also applied a tourniquet above the tumour over the femoral artery, with directions that it should be tightened in case the tumour should burst, as I feared it would, from the great swelling and enlargement, together with the excessive pain and inflammation.



The tumour continued slightly to improve for some time, when one night she felt and heard a sudden snap or report in the leg, from which time all the symptoms subsided, and she continued to improve, till, two or three weeks afterwards, there was nothing left of the aneurismal tumour but a little hardness, or, apparently, a cartilaginous tumour, immediately over the femoral artery, and which appeared to be the centre of the swelling. Her leg, for some time, was weak, but the strength gradually returned, and she was soon able to walk as well as ever. She has been perfectly sound for nearly fifteen years, and I have several times exhibited the patient to our school, when lecturing upon this subject.

I herewith annex a plate, or figure, representing the appearance of the aneurism when I first commenced the treatment of it. About two years after the patient recovered, two surgeons called upon her to know whether she continued well, and what means I employed to effect the cure.

## CHAPTER XXIV.

### RUPTURE—(*Hernia.*)

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#### *Description.*

**HERNIA**, or rupture, is the protrusion of any viscus from its proper cavity. It has obtained various names from its situation, as the *inguinal*, when it occurs in the groin; the *scrotal*, when it occurs in the scrotum; the *femoral*, when it is situated under the crural arch, or Poupart's ligament; *umbilical*, when it occurs in the abdomen, or umbilical region; *ventral*, when it is situated in some other part of the parietes of the abdomen—most frequently in the linea alba, but sometimes in the linea semilunaris—a very rare complaint; *hernia congenita*, formed by a protrusion through the abdominal ring into the tunica vaginalis testis, and can only happen in the cases where this cavity remains continuous with the general cavity of the abdomen. The protruded viscera are in contact with the testicle, the hernial sac being the tunica vaginalis. There are some instances of the bladder and stomach escaping from their cavities, and forming hernial tumours.

If a portion of intestine forms it, it is called *enterocele hernia intestinalis*, or gut rupture; if a piece of omentum only, *epiplocele hernia omentalis*, or caul rupture; and if both intestine and omentum contribute mutually to the formation of the tumour, it is called *entero-epiplocele*, or compound rupture.

If the piece of gut or caul descends no lower than the groin, it is said to be incomplete, and is called *bubonoccele*; if the scrotum be occupied by either of them, the rupture is said to be complete, and bears the name of *oscheoccele*.

When the protruded bowels lie quietly in the sac, and admit of being readily put back into the abdomen, the case is termed a *reducible hernia*; and when they suffer no constriction, yet cannot be put back, owing to adhesions, or their large size, in relation to the aperture through which they have to pass, the hernia is termed *irreducible*. An incarcerated, or strangulated hernia, signifies one which not only cannot be reduced, or without great difficulty, and the consequence is, often, that the contents of the intestine cannot be expelled, and inflammation takes place, and brings on alarming and fatal consequences, if relief be not speedily obtained. It is a prevalent idea, that the contents of the abdomen are protruded through some ruptured viscus or part; but this is a mistaken notion, as it arises from dilatation, not rupture. Both the scrotal and femoral hernia pass out from the abdomen by openings which are natural to every human body; as well those who have not ruptures, as those who have. The former, that is, the scrotal, descend by means of an aperture in the tendon of the external oblique muscle, near the groin, designed for the passage of the spermatic vessels in men, and the ligamenta uteri in women;



and the latter made by Pourpart's, or Fallopius' ligament, at the upper part of the thigh, along with the great crural vein and artery.

### Causes.

The *causes* of hernia are, *debility* of any particular part of the parietes of the abdomen, whether natural or the consequence of morbid affections, and violent efforts by which the muscles of the abdomen are made to contract forcibly upon their contents; lifting heavy weights, jumping, running, violent coughing, parturition, vomiting, straining at stool, and many other analogous exertions of the muscles: these are the *occasional causes* of hernia.

The causes of hernia are either *predisposing* or *exciting*. Among the former, writers mention a preternaturally large size of the openings, at which the bowels are liable to protrude; a weakness and relaxation of the margins of these apertures; a preternatural laxity of the peritoneum; an unusually long mesentery, or omentum, &c. With regard to the abdominal ring, the transverse tendinous fibres which naturally cross and strengthen its upper and outer part, are much weaker in some subjects than others. No idea seems more prevalent in books, than that taking a good deal of oil with our food, is conducive to the formation of hernial diseases. Some of the alleged predisposing causes may justly excite skepticism; but several circumstances tend to prove, that a natural deficiency of resistance, in any part of the parietes of the abdomen, promotes the occurrence of hernia. Hence, persons who have had the peritoneum wounded are very liable to the present disease; (*Richerand, Nosogr. Chir.* t. iii. p. 317. *Schmucker, Vermischte Chir. Schriften*, b. i. p. 197.) and men are much more liable than women to inguinal hernia, evidently from the larger size of the abdominal ring; while, in women, as there is a larger space for the protrusion of the viscera, below Poupart's ligament, they are more exposed than men to femoral hernia.

With regard to the *exciting* causes, our knowledge is involved in less doubt. The grand cause of this kind is the powerful action of the abdominal muscles and diaphragm on the viscera. In feats of agility, such as jumping, &c. the pressure which the contents of the abdomen must often encounter, sufficiently accounts for their protruding at any part, where the abdominal parietes do not make adequate resistance. The same consideration explains why hernia very often takes place in lifting and carrying heavy weights, running, vomiting, straining at stool, parturition, &c. and in people who inhabit mountainous countries.

The diminution of the capacity of the abdomen, by the action of the abdominal muscles and diaphragm, in many occasional exertions, must take place in every body, by reason of the common habits and necessities of life. But, as only a certain number of persons meet with the disease, it is fair to infer, that either the exciting causes must operate with greater force in them, than in the generality of people, or else that their abdominal parietes have not been capable of the ordinary degree of resistance. Many patients, who meet with hernia in making violent efforts and exertions, may be in the former



circumstance; while others, whose viscera protrude from such trivial things as coughing, sneezing, crying, &c., must be considered as being under the influence of some predisposing cause. A gentleman, who has gained great honour by a most valuable treatise on hernia, remarks, that “hernia, which originates in predisposition, generally comes on gradually, and almost imperceptibly; while those which are produced by bodily exertions, are formed suddenly, and by the immediate action of the exciting cause. The occurrence of the complaint is often indicated, in the first instance, by a fullness, combined with a sense of weakness, about the abdominal ring. The swelling is increased by an action of the respiratory muscles, and disappears on pressure, and in the recumbent position of the body. It gradually finds its way through the tendon of the external oblique muscle, into the groin, and afterward into the scrotum. When a hernia takes place suddenly, it is generally attended with a sensation of something giving way at the part, and with pain.”—(*Lawrence on Ruptures*, p. 42. 4th. edit.)

Upon the subject of the immediate cause of hernia, it is observed by Scarpa, that several distinguished modern surgeons, as, for instance, Warton, (*Adenograph*, cap. xi.) Benevoli, (*Dissertationi Chirurgiche*, l.) Rossius, (*Acta Nat. Cur.* t. ii. obs. 178.) Brendel, (*De Herniarum Natalibus*), and Morgagni, (*De Sed. et Caus. Morb.* epist. xliii. art. xiii.) consider a relaxation and elongation of the mesentery as the principal cause of hernia in general, and of the bubonocoele in particular. Hence, say they, the whole mass of intestines, or only a portion of an intestine, descends against the inner orifice of the inguinal ring, presses against this opening, and gradually makes its way out of the abdomen. Debility, causing relaxation of the muscular fibres, is unquestionably the principal and immediate cause of hernia or rupture.

### *Symptoms of Hernia in general.*

The general symptoms of a hernia, which is reducible, and free from strangulation, are, an indolent tumour at some point of the abdomen, most frequently descending out of the abdominal ring, or from just below Poupart's ligament, or else out of the navel; but, occasionally, from various other situations, as will be presently explained. The swelling often originates suddenly, and is subject to a change of size, being smaller when the patient lies down on his back, and larger when he stands up, or holds his breath. It frequently diminishes when pressed, and grows large when the pressure is removed. Its size and tension often increase after a meal, or when the patient is flatulent. In consequence of the unnatural situation of the bowels, many patients with hernia are occasionally troubled with colic, constipation and vomiting. Sometimes, however, the functions of the viscera seem to suffer little or no interruption.

Sometimes the contained parts may be known by the symptoms. But, as Mr. Lawrence justly remarks, this discrimination is often difficult, and even impossible, when the hernia is old, large and very tense: for, in cases of this description, the viscera experience con-

siderable changes in their figure and state, while the thickened hernial sac prevents an accurate examination by the hand.—(*On Ruptures*, p. 46. 4th. ed.)

If the case be an *enterocele*, and the portion of intestine be small, the tumour is small in proportion; but, though small, if the gut be distended with wind, inflamed, or have any degree of stricture made on it, it will be tense, resist the impression of the finger, and give pain upon being handled. On the contrary, if there be no stricture, and the intestine suffer no degree of inflammation, let the prolapsed piece be of what length it may, and the tumour of whatever size, the tension will be little, and no pain will attend the handling of it. Upon the patient's coughing, it will feel as if it were blown into, and in general it will be found very easily returnable.—(*Pott.*) A gurgling noise is often made when the bowel is ascending. An *enterocele* is also generally characterized by the uniformity of its surface and its elasticity.

If the hernia be an *epiplocele*, or one of the omental kind, the tumour has a more flabby, and a more unequal feel; it is in general perfectly indolent, is more compressible, and (if in the scrotum) is more oblong, and less round, than the swelling occasioned in the same situation by an intestinal hernia; and, if the quantity be large, and the patient adult, it is, in some measure, distinguishable by its greater weight. In very young subjects, the contents of a hernia are generally intestine, and but seldom omentum.—(*A. Cooper, Lectures*, vol. iii. p. 8.)

If the case be an *entero-epiplocele*, that is, one consisting of both intestine and omentum, the characteristic marks will be less clear than in either of the simple cases; but the disease may easily be distinguished from every other one, by any body in the habit of making the examination.—(*Pott*, p. 28.)

As the smooth slippery surface of the intestine generally makes its reduction easier than that of the omentum, we may infer, with Mr. Lawrence, "that if a portion of the contents slip up quickly and with noise, leaving behind something which is less easily reduced, the case is probably an *entero-epiplocele*."—(*Op. cit.* 4th. ed. p. 47.)

On the subject of prognosis, Mr. Pott remarks, that the age and constitution of the subject, the date of the disease, its being free or not free from stricture or inflammation, the symptoms which attend it, and the probability or improbability of its being returnable, necessarily produce much variety.

If the subject be an infant, the case is not often attended with much difficulty or hazard, the reduction being easy as well as the descent; and though, from neglect or inattention, the bowel may fall down again, yet it is as easily replaced, and mischief seldom produced: Mr. Pott says seldom, because he has seen an infant, one year old, die of a strangulated hernia, which had not been down two days, with all the symptoms of mortified intestine. For other examples of strangulated hernia in very young infants, refer to *Gooch's Chir. Works*, vol. ii. p. 33; *Lawrence on Ruptures*, 4th. edit. p. 77; *Edin. Med. and Surgical Journal*, vol. iii. p. 470, &c.

"If the patient be adult, and in the vigour of life, the consequences of neglect or mal-treatment, are more to be feared than at any other

time, for reasons too obvious to need relating. The great and principal mischief to be apprehended, in an intestinal hernia, is an inflammation of the gut, and an obstruction to the passage of the aliment and fæces through it; which inflammation and obstruction are generally produced by a stricture made on the intestine. In very old people, the symptoms do not usually make such rapid progress, both on account of the laxity of their frame, and their more languid circulation; and also because their ruptures are most frequently of ancient date, and the passage a good deal dilated: but then, on the other hand, it should also be remembered, that they are by no means exempt from inflammatory symptoms; and that if such should come on, the infirmity of old age is no favourable circumstance in the treatment, which may become necessary.”—(Pott.)

If the disease be recent, and the patient young, immediate reduction, and constant care to prevent another protrusion, are the only means whereby it is possible to obtain a perfect cure.

### Treatment.

#### 1st. In reducible hernia.

The first thing to be done will be to return the protruded parts into their original cavity, by making gentle pressure upon the hernial tumour, and this is in general most easily effected in a recumbent position. There is very little inconvenience attending this complaint, while the protruded viscera can be easily returned. It may be troublesome both from the bulk of the swelling, and from the intestinal derangements which are apt to take place; but, independent of these circumstances, it may exist throughout life, without causing more than slight inconvenience. But this state cannot be depended upon, as, from various causes, such as straining, lifting, coughing, &c., the parts may be displaced from their natural situation, and become exceedingly difficult to reduce, and be attended with very serious, if not fatal consequences. The patient, therefore, should immediately return the parts, and then take proper means to secure them, to prevent them from being displaced. There have been several contrivances to effect this, such as various kinds of bandages and trusses. A truss, in general, of proper mechanism, is best adapted to the purpose. By its permanent pressure upon the opening, the parts are prevented from descending, and a permanent cure is often effected. A Doctor Hull, of this city, has invented a truss which answers as well, or better than any I have seen, although there is said to be some as good, or better than this.

Dr. Hull claims for himself the merit of accomplishing the true indications in the surgical treatment of reducible hernia, by the four following distinctive peculiarities embraced in his truss, viz.

1st. The *concave* internal surface of the *rupture pad*, from its pressure being greatest at the *circumference*, tends constantly to approximate the hernial parietes, affording them rest and mechanical support.

2d. The combined hinge and pivot mode of connexion between the *spring* and *pad*, by means of a tenon and mortice so constructed as to preserve a *double hinge* and *limited joint* acting in every direction, thereby securing the uniform pressure of the spring on the pad, and



sustaining the same nice coaptation of the pad and rupture opening, as well under the varied ordinary muscular actions as when the body is in a recumbent posture.

3d. The graduating power and fixture of the pad to the spring, rendering, as will be readily perceived, the condition of the pad perfectly controllable, even to nameless minuteness. Also resulting from this mechanism is the advantage of accommodating a large truss to a small person; hence the facility of supplying, without disappointment, persons at a distance.

4th. The double inguinal truss being simply the addition of another pad attached to a short elastic metallic plate: this plate with its pad move on the main spring by the same power of adjustment and fixture as the first pad, the pressure of the pads being graduated at pleasure by an intervening cork wedge.

It is calculated for all classes, even infants, and is worn with a great deal of ease and comfort by the patient. In some cases, bandages answer a better purpose than a truss, as some persons are unable to wear them. They answer often best for children, and may be made for umbilical hernia, by passing a piece of leather of a suitable width around the body, and drawn sufficiently tight by means of straps and buckles, and made to press moderately upon a pad or cushion, stuffed with wool, hair, or cotton. The diameter or size of this cushion should be large enough to prevent danger of its being displaced, or of its sliding or slipping from the hernial tumour.

Many years ago, in consequence of great fatigue in practice, I experienced some symptoms of a hernia. Being unable to wear any kind of a truss, I invented a simple bandage, which I found very effectual, and which has cured the complaint. It consists simply in a piece of buckskin, about six inches in width, made to pass around the body, and to be securely fastened by straps. One or two pieces of the same, of a suitable width, are fastened to the back part of this bandage, over or near the spine, and which pass between the legs, and are secured before, in like manner, directly over the seat of the hernia. A pad about twice as long as it is broad is to be secured or fastened to the bandage.

After the protruded parts are replaced, which must be done by laying in a recumbent position, the bandage is to be applied. The first that I made, I placed the pad upon the straps, which were fastened before, to secure the bandages which pass between the legs. I know not how this may answer in general, but, in my own case, it proved very effectual. In my complaint, it appeared that the omentum had only passed through the internal abdominal ring, which constituted a hernia only in its forming or incipient stage. The bandage may be taken off at night, or continued, as the patient may prefer. When a truss is applied, and the patient is ruptured in both groins, one that is doubled should be used; one spring going quite round the body, and terminating in two pads, one over each aperture. Should the truss slip upwards, a strap may be passed between the thighs, which will prevent it.

With respect to the application and use of trusses, the following instructions seem to merit attention:



1st. A truss should never be first applied, or changed, except when the patient is in the horizontal posture, and it is known with certainty that all the contents of the rupture are completely reduced.

2d. The first applications of a truss should always be made under the superintendence of the physician himself; and care should be taken to put on the instrument in such a manner that the lower third of the pad will compress the neck of the hernial sac against the os pubis, while the upper portion will compress the abdominal ring. The practitioner should also make the patient acquainted with the right manner of applying the truss; the principles on which it keeps up the bowels, and affords a chance of a radical cure; the requisite cautions to be observed, &c. When a patient first begins to wear a truss, he should be particularly careful not to be guilty of any imprudent exertions, and it behooves him to observe most attentively that the instrument does not slip from its proper situation. It will also be necessary for him to pay attention to the instrument being neither too tight nor too loose.

3d. The patient ought to be provided with at least two trusses, which should be changed every morning, in bed. In order to save the truss, especially in fat persons, who perspire a great deal, it is a good plan to lay a soft piece of calico under the pad.

4th. An uneasiness about the ring, which always gives rise to a suspicion that a portion of intestine or omentum is protruded, makes it proper to take off the truss, carefully examine the parts, and reduce them if they have descended.

5th. When the skin is excoriated by the truss, the part may be cured by sprinkling upon it the powder of elm-bark, or bathing the part with an astringent lotion. It will also be right to protect the excoriated place with a piece of linen put under the truss.

6th. When the pressure of the truss excites affections and swellings of the spermatic cord and testicle, either the thigh-strap must be relaxed, or the lower part of the pad made less prominent. And when strong pressure is absolutely necessary to keep the hernia reduced, the pad should have an excavation in it over the spermatic cord. Whoever wears a truss, should be careful to employ it day and night, without interruption, so that there may be no opportunity for the hernia to protrude again. If, under the employment of a truss, the rupture once descends again, either a strangulation happens from the narrowness of the neck of the sac, or, at all events, the hope of a radical cure, which may have been entertained for years and months, is destroyed in a moment; for experience has put it beyond all doubt, that by the continual, unremitted use of a truss, and the steady retention of the contents of the hernia, the neck of the hernial sac and the ring may be gradually lessened in diameter, until they are entirely closed, and a radical cure of the rupture effected. This is more frequently observed in young subjects, seldom in adults, and scarcely ever in persons of advanced years. But trusses must be worn a long while; nor should the patient venture to lay aside their use till after many cautious attempts; beginning the experiment at first only in the night-time, and not making it in the day till after a considerable period from the time when he first thinks himself safe.

The longer and more attentively a truss is worn, the greater is the hope of a radical cure.—(*Callisen, Syst. Chir. Hod. t. ii.*)

Sometimes there is great debility and inflammation about the parts, and when this happens, cooling and tonic applications may be employed.

Various means have been proposed to effect a radical cure of hernia in this condition. Some have recommended the patient to lie placed several weeks in a recumbent position, to give an opportunity for the opening to be permanently closed. Others have recommended the application of caustic to the parts, and some cutting down and applying a ligature.

There was a person in some part of this state, very famous for the cure of ruptures; and from the statements made to me of his success, I obtained his treatment. I found it to consist in applying to the rupture, two or three times a day, simply the oil of eggs, obtained by boiling them very hard, and pressing them between two pewter plates. I have never used it, and therefore cannot speak of its effects.

A preparation has been used in Europe, by a few practitioners, which, from the account given, and the properties of the article recommended, promises more benefit than any other application. I shall give an account of it, taken from the *Edinburgh Medical and Surgical Journal*.

*Mr. Lizars on the Decoction or Extract of Oak Bark in Hernia.*—For these many years past, I have used for reducible hernia, either in the adult male, female, or in children, a strong decoction of oak bark, with wonderful success. In men I have succeeded in curing them from birth to seventy-five years of age, and in women to fifty years of age. Children are very easily cured by this means, particularly of the umbilical hernia.

The manner of preparing the decoction is, to macerate a few pounds of oak bark, in a sufficient quantity of cold water, for twelve or twenty-four hours, then to put both bark and solution into a large boiler, and to keep the fluid at the boiling temperature, over a gentle fire, for two or three days, adding, when required, boiling water from time to time, so that the bark may be always covered. The intention is to extract all the virtues of the bark. The bark, after this slow decoction, should be removed, washed with more boiling water, which is to be added to the strong decoction, and reduced to the consistence of nearly an inspissated juice. When used, it should be warmed, to suspend the astringent matter; the hernia must be previously reduced; then the groin bathed or splashed, and the truss applied immediately after. The application should be repeated three or four times a day. In this way I have succeeded in curing hernia of many years standing, in the course of a few weeks. In general, it requires a perseverance of three months. A case of double rupture, one of which the patient had laboured under for twelve years, was cured in nine days. He was thirty-six years of age, and had been invalided out of the public service for the complaint. In umbilical hernia, so common to children, it succeeds very soon.

The *modus operandi* appears to be, first, the corrugation of the skin and contraction of the muscles; secondly, increased determination to the part; thirdly, a deposition of substance, most probably cellular substance, which effectually shuts up the aperture. That there is a con-

traction of the muscles, we are entitled to conclude, from the tumour not so readily protruding after each application of the decoction. That there is a local determination, is evident from the stimulus applied, and the heat produced. Lastly, that a deposition of substance takes place, we are entitled to infer, by the treatment proving effectual in the cure of crural hernia, where no muscular contraction can take place to any extent.

This invaluable remedy was mentioned to me by a merchant in this neighbourhood, who cured himself after having laboured under the disease for many years. In 1757, a hospital was constituted, near Westminster bridge, for ruptured people, and a Mr. Lee, of Arundel-street, was appointed surgeon. This gentleman is said to have been successful in curing men belonging to the army and navy, after they had been invalided and sent to Chelsea and Greenwich hospitals. These men were returned fit for the service. One was seventy-four years old, and had been ruptured for ten years. I can find no trace of the treatment adopted by this gentleman; but it is possible that it may have proceeded on the same principles.

### *Of Irreducible Hernia.*

Ruptures are very often irreducible, when they are not in a state of strangulation. The chief circumstances which prevent their return are, an increase of bulk, and preternatural adhesions to surrounding parts. Bands formed of coagulating lymph pass in some cases in various directions through the hernial sac, and water, in many cases, collects in considerable quantity, rendering it necessary to tap the tumour for its evacuation.

Irreducible herniæ must, in a great measure, be left to themselves. The inconveniences arising from the bulk are considerable, and there is constant danger of strangulation. This risk is diminished in many cases by the great dilatation of the ring, but it nevertheless exists, and should render the patient extremely cautious of all violent exertions, and he should especially guard against costiveness. A suspensory bag, such as is used in cases of swelled testicles, or hydrocele, will be found to obviate some of the unpleasant effects of the tumour. Cases considered as irreducible hernia have in some instances been gradually returned into the abdomen, in consequence of long confinement to bed and frequent purges, together with an adherence to an abstemious diet. In addition to these remedies, when the patient consents to employ them, moderate and increasing pressure should be made upon the tumour, by means of a sac of firm linen, made so as to lace up to it in front.

Irreducible hernia should be carefully protected from accidental injuries, as the most serious consequences have sometimes resulted from blows upon such parts. And, it is to be recollected, that during the whole time of protrusion there is a risk of strangulation, in consequence of any violent exertion.

Patients afflicted with irreducible hernia are liable to indigestion and bowel complaint from very slight causes, and, therefore, they ought to be extremely guarded against errors in diet; they should also pay particular attention to prevent costiveness by the use of clysters



or laxative medicines, when these become necessary. If, however, it should take place in an irreducible rupture, it will be generally found to arise from an accumulation in the contents of the bowels; and, therefore, cathartic medicines and clysters very frequently relieve it without much difficulty.

*Symptoms and Treatment of a Strangulated or Incarcerated Hernia.*

The earliest symptoms have been already related, viz. "tumour in the groin or scrotum, attended with pain, not only in the part, but all over the belly, and creating a sickness and inclination to vomit, suppression of stools, and some degree of fever. These are the first symptoms, and, if they are not appeased by the return of the intestine; that is, if the attempts made for this purpose do not succeed, the sickness becomes more troublesome, the vomiting more frequent, the pain more intense, the tension of the belly greater, the fever higher, and a general restlessness comes on, which is very terrible to bear.

According to Sir Astley Cooper, one of the earliest symptoms of a strangulated hernia is pain about the diaphragm, followed by continual eructation. The patient is next troubled with vomiting and costiveness. He feels a great inclination to have stools, but cannot succeed in his attempts to expel the fæces. There is some pain in the swelling; and a great deal at the part where the stricture is situated. Afterward the abdomen becomes considerably distended with air, such distention not arising at first from inflammation, but from the cause here mentioned, as is proved by pressure on the abdomen not giving at first any pain. The vomiting becomes more frequent, and feculent matter is ejected from the stomach; into which it is brought by what is called the antiperistaltic action of the bowels. A clyster will sometimes bring away a portion of feculent matter, but the quantity will be extremely small. While the abdomen is in this tense state, but unaccompanied with pain, and while there is frequent vomiting of the fæces, the pulse is hard, frequent and very distinct: but, in the next stage of the symptoms, when the abdomen is not only tense, but painful on being touched, the pulse is extremely small and frequent. The vomiting and eructation continue, and the patient is pale, and covered with a cold perspiration. The tumour becomes very tense, hard, and in general a little inflamed on the surface of the skin.

Difficulty of reduction (says Pott) may be owing to several causes. The size of the piece of omentum, or the inflamed state of it; the quantity of intestine and mesentery; an inflammation of the gut, or its distension by fæces or wind; or the smallness of the aperture of the tendon through which the hernia passes. But, to whatever cause it be owing, if the prolapsed body cannot be immediately replaced, and the patient suffers pain, or is prevented thereby from going to stool, it is called an *incarcerated hernia*, a *strangulated hernia*, or a *hernia with stricture*.

The symptoms are a swelling in the groin or scrotum, resisting the impression of the fingers: if the hernia be of the intestinal kind, it is generally painful to the touch, and the pain is increased by coughing, sneezing, or standing upright. These are the very first symptoms, and, if they are not relieved, are soon followed by others, viz. a sick-



ness at the stomach, a frequent retching or inclination to vomit, a stoppage of all discharge per anum, attended with a frequent hard pulse, and some degree of fever.

A patient thus circumstanced is in some danger, and demands immediate assistance. A stricture made on the prolapsed part of the gut by the aperture through which it passes, is the immediate cause of all the bad symptoms, and of course the removal of such stricture is the only thing which can bring relief. This object can only be accomplished by returning the bowel back into the abdomen, or relaxing the parts which form the stricture.

We next proceed to notice the various measures to be adopted for the relief of a strangulated hernia, so as to obtain the best chance of doing away the necessity of an operation.

*Taxis*.—This is the term applied to the operation of reducing a hernia with the hand. It is much promoted by the position of the body; which Winslow thought should be placed on an inclined plane, and the thighs bent towards the trunk. Sir A. Cooper advises the same practice, observing that this posture, by relaxing the fascia of the thigh, relaxes also the aperture through which the hernia passes. Every degree of tension and relaxation of the femoral fascia, must undoubtedly be attended with a corresponding change in the abdominal ring. But flexion of the thigh, besides relaxing this fascia, also relaxes the abdominal internal iliac, and psoas muscles. In cases of inguinal hernia, the pressure made on the tumour by the hands of the surgeon, should always be directed upwards and outwards, along the course of the spermatic cord; and Sir A. Cooper advises it to be continued from a quarter to half an hour.—(*On Inguinal and Congenital Hernia*.)

As the femoral hernia passes downwards and then forwards, the pressure must be directed first backwards and then upwards. In umbilical and ventral hernia it is to be made straight backwards. No violence should ever be used; for, besides being unavailing, it greatly aggravates the inflamed state of the contents of the hernial sac, and has been known even to burst the intestine.—(*See Cooper on Inguinal Hernia*, &c., p. 23.)

Besides bending the thigh, care should also be taken to rotate it inwards, which will have great effect in relaxing the femoral fascia and tendon of the external oblique muscle. Suspension of the patient over the shoulders of an assistant has been thought to facilitate reduction: "I have tried it often, (says Mr. Hey,) but have not found it to be of such superior efficacy as some authors have represented."—(P. 144.)

The manœuvre of gently pulling the intestine downwards, or a little way further out of the ring, previously to the attempt to reduce the hernia, has been suggested.—(*See Balfour's New Mode of the Taxis*, in *Med. and Phys. Journ.* Nov. 1824.) The plan, I believe, is not entirely new, and it is noticed by Mr. Lawrence, who says, that it will sometimes succeed, when the difficulty of reduction is owing to an accumulation of fecal matter.

The return of a piece of intestine is generally preceded by a peculiar noise, caused by the passage of air through the stricture. It recedes at first gradually, and then slips up suddenly. The omentum goes up slowly to the very last portion, which must be actually pushed

through the opening. If the taxis should not succeed at first, it will often do so after the warm bath or cold applications. Small herniæ, being attended with the closest stricture, are the most difficult to reduce, and, for the same reason, crural ruptures do not so often yield to the taxis as inguinal hernia in the male subject. The taxis becomes less likely to succeed, the longer the inflamed viscera have been down, because adhesions are liable to form. Mr. Lawrence observes, (p. 63.) "When the rupture becomes painful, we are no longer justified in persevering in attempts at reduction by the hands. A sufficient pressure cannot now be endured; and the force which is employed only tends to increase the inflammation, and accelerate the approach of gangrene." Desault even proscribed the taxis altogether in the inflammatory strangulation, until the previous use of other means had produced a change in the state of the swelling.

That the taxis is frequently abused, and the cause of serious mischief, is a truth that cannot be doubted. "Strangulated herniæ," says Scarpa, "very frequently mortify from the negligence of the patients, and their repugnance to submit to an operation; and, perhaps, still more frequently from the effect of the taxis, unskillfully exercised by uninformed surgeons, who are determined, at any price whatever, to accomplish the speedy reduction of the viscera. The majority of them make no distinction between the *acute* and the *chronic* strangulation. In both cases, no sooner are the symptoms of strangulation evinced, than they begin to handle the swelling roughly, and to push the viscera with all their force, in order to make them return into the abdomen; while, when the strangulation is *acute*, and the patient young and strong, the taxis ought never to be practised before all the means proper for diminishing the strength, calming spasm, and relaxing the parts which are to be reduced, have been employed for a certain time."

The distinction here made by Scarpa is one of the greatest practical importance, and one which no surgeon should lose sight of in his attempts at the taxis. The terms *acute* and *chronic*, applied to each individual case of incarcerated hernia, will be intelligible to the merest tyro, although the ambiguity in the application of these terms to other subjects is too obvious and perplexing to be denied. To recognise this distinction will result as Scarpa predicts; and operations for strangulated hernia will be less frequent, "and the taxis will very generally be successful." I speak on this subject from a personal knowledge of its value; and for several years, although sent for frequently to operate, I have been able to succeed in dispensing with the use of the knife very generally, by a modification of the practice here recommended, after the taxis had been ineffectually attempted for hours, and in one instance these attempts had been continued at intervals for two days.—(Reese.)

Things are different with regard to the *chronic* strangulation of old large herniæ, in feeble or aged persons; for, in these cases, it is of great importance to support the patient's strength. Bleeding, the warm bath, and other weakening means, should also be avoided, which, in producing a general atony, might bring on gangrene of the intestine, either during the strangulation, or after the reduction of the

viscera. It is ascertained, that these kinds of strangulation are almost always occasioned by an accumulation of fæcal matter, or an extraordinary quantity of air in the hernia. Nothing is more efficacious than cold applications, for promoting the action of the bowel on the matter which distends it, or for lessening the volume of the air. They produce a corrugation of all the scrotum, and contractions of the cremaster, which alone sometimes suffice for reducing the viscera, in a much better manner than could be done by the hands of the most experienced surgeon.—(*Scarpa, Traité des Hernies*, p. 244—247.)

*Bleeding.*—The inflammation which attacks the protruded viscera, and spreads thence over the whole abdomen, and the temporary weakness and often fainting which the sudden loss of blood induces, and which is a peculiarly favourable opportunity for reducing the herniæ by the hand, are the reasons in favour of bleeding. Sharp, Pott, B. Bell, Sabatier, Richter, Callisen and Scarpa, are all in favour of bleeding. Wilmer, Alanson and Sir Astley Cooper have published against the practice.—(*S. B. Cooper.*)

The method of reduction practised by M. Gimbernat, of Madrid, is so ingenious, and at the same time so successful, that I shall give it in detail. He places the patient on his side opposite the hernia, with his body a little bent and lower than the pelvis, in order to relax the muscles of the abdomen. With the same intention the head is brought forward towards the chest, and in the *hernia femoralis* he elevates the thigh on which the hernia is, yet so as not in the least to obstruct the operation. Sitting then by the bedside, with his hand which is nearest to the patient he grasps the tumour at its base, which is the upper part, and with his three first fingers he compresses it all round to diminish its diameter; at the same time with the fingers of the other hand he pushes the apex, which is the lower end of the tumour, upwards and inwards, to direct it towards the crural arch, because it cannot be reduced in any other direction. He has sometimes found that more than one hour was required for this operation. When the patient is fatigued, he ceases both to press and push, but yet never quits his hold; and when he renews these efforts, he increases gradually their force.

Of numerous herniæ treated by him in this way, and many of them desperate, those which have not been reduced have been very few.

It may be needless to add, that this method is improper if the tumour is inflamed and very painful, of the part which causes the strangulation. This operation is safe, easy, and generally successful.

It is now the practice, with most surgeons, to wait but a very few hours before an operation is performed, in strangulated hernia. After following the means which I have found are not calculated to reduce it, recourse is had to the knife. Some surgeons commence an operation almost immediately, alleging that it is extremely dangerous to delay even a few hours. Others again wait a greater length of time.

The operation consists in dividing the integuments, dissecting down to the hernial sac and opening it, removing the stricture, and replacing the protruded viscera.



I will not take it upon me to assert that this operation is never necessary, but I am confident that it is seldom or very rarely so. I have the best authority for stating that most of the cases of strangulated hernia for which an operation is performed, would be spontaneously cured, or might be by proper treatment. In very many cases where an operation has been proposed, the patient has recovered by very simple means, or none at all. I have been called to some where, at first view, it has seemed impossible to return the protruded viscera without cutting down and dividing the stricture; and yet, by prompt and energetic means, I have succeeded in reducing it, and by the following means:

1st. *Purgatives*.—The treatment may be commenced by administering a dose of castor oil; no other physic (olive oil excepted) but this, will answer in the complaint. Those of a very stimulating nature are apt to aggravate the symptoms. But oleaginous purgatives are beneficial, by the relaxation which follows their exhibition.

2d. *Injections*.—It sometimes happens that this medicine, or any kind of physic, will not be retained upon the stomach. When this takes place, our dependence must be placed upon injections or clysters. The following may be given:

Take of *lobelia inflata*, q. s.

Make a strong infusion; to half a pint of which, add as much milk, as much molasses, and a gill of olive or sweet oil. Mix, and administer with a suitable sized syringe, to be repeated every hour. Not only the fecal contents of the intestine are evacuated by this injection, but it has a great tendency to remove the stricture by its emollient and relaxing properties.

3d. *Opiales*.—Opium, in strangulated hernia, is often exceedingly valuable. It checks the vomiting attendant on the stricture; allays pain and irritability of the system; removes the tension of the parts, and will often effect a speedy reduction. About three grains should be given every two hours, until the desired effect is produced.

#### *External Applications.*

1st. *Steaming or Fomentations*.—A strong decoction of bitter herbs, tansy, wormwood, hoarhound, catnip and hops, may be thrown into a suitable sized tub or vessel; a narrow piece of board placed over it, on which the patient must be placed, and a blanket thrown round to retain the steam. This will produce perspiration, and contribute very much to lessen the inflammation.

2d. *Discutients*.—Let the hernial tumour, including the neck of it, be bathed with the discutient ointment for half an hour at a time, and when applied, let some heated article be held a little distance from the parts. The green oil may also be used. Let them be alternately applied every hour or two. They also prove serviceable by their emollient and relaxing properties.

3d. *The Hot or Warm Bath*.—Should the hernia still remain unreduced or strangulated after these means, let the patient be immersed in a warm bath, and continued in until he begins to feel faint.

4th. *Poultices*.—After any of the foregoing applications have been used, let an alkaline poultice be applied over the parts and over the



seat of the stricture. Let the slippery-elm bark be mixed with weak ley, until a poultice of a proper consistence is formed, to be applied tepid, and often renewed. I have found the best effects from this application in strangulated hernia. In one case, I applied it when I left the patient at night, and in the morning the viscera returned without the taxis or any manual operation. It removed the pain, swelling and inflammation, and the parts in the morning appeared very wrinkled or shrivelled.

5th. *Cupping*.—In very critical cases, where reduction is found difficult, four or five cups may be applied around the neck of the tumour. It has a much better effect than general blood letting, although I have seldom found this operation necessary in the worst cases.

6th. *Cold or Refrigerant Applications*.—Some physicians or surgeons highly extol cold applications, such as cold water, ice, &c. ; but in most cases, as far as I have ascertained, they are attended with a decided injurious effect. They appear to make the stricture worse instead of better ; and this, no doubt, arises from the sedative effects of the cold. There is one application, however, that appears to have been attended with some success, which is the sulphuric ether. Dr. Reese, of this city, the editor of the last edition of Cooper's Surgical Dictionary, informs me that he has used with great benefit *sulphuric ether*.

He wets the hernial tumour with the liquid, and then, in order to produce speedy evaporation, blows upon it with a pair of bellows. He states, that he has reduced a number of strangulated hernias, by this method alone, when they had been doomed to undergo an operation.

8th. *Manual Aid, or Assistance*.—It becomes necessary during the time the patient is making use of these various means, from time to time, to make attempts to return the protruded viscera by manual assistance, or what is usually termed, the *taxis*. In accomplishing this, considerable judgment is necessary. The position of the patient should be particularly attended to. His legs and buttocks should be elevated as high as possible, forming an angle, if possible, of 45 degrees. This can be very easily accomplished, by placing the back parts of a chair underneath him. His thighs and the body should be a little flexed, in order to relax the muscles. The tumour should then be seized, and moderate pressure made, in order to return the viscera, as has been previously directed.

But I have usually found that the patient himself could succeed best, in performing this part of the business. In most instances, it is the case, that the viscera have been often down, and he has been in the habit of returning them himself, by which means, he acquires a tact in doing it, with which the most skilful surgeon is not conversant.

The above method, in case of strangulated hernia, I have practised invariably, with success, nor have I found that danger arising from delay of which writers speak. In difficult cases, it sometimes has required several days to reduce the hernia ; in other cases, a few hours only. It is stated by many, that even a few hours' delay, are fatal ; and this is probably the case, under bad treatment, or bad management. But I have never witnessed any such result. An opponent to this treatment, or to any longer delay than usual, before an operation

was performed, might say that mortification would take place, and in this way prove fatal, and had such operation been performed, the life of the patient might have been preserved. But this is by no means a conclusive or valid argument, because it is impossible to say what might be the case under different management, or the common course of treatment. It is more probable, that the life of the patient would be lost or endangered by the use of the knife, or dividing the stricture; an inference which is very fairly drawn from the many fatal cases resulting from such practice. And suppose that a patient should be lost under the treatment that I lay down, would it prove that it was any the less efficacious than a surgical operation. I conceive not. I think it would be much more reasonable, judging of the comparative effects of the two modes of practice, to infer that this treatment would save the lives of those patients which are lost in consequence of an operation; and therefore, from the uniform success which I have had by pursuing this method, I can confidently recommend it in preference to the one adopted, viz., of operating for a strangulated hernia almost immediately. I am persuaded that more cases would be lost by the knife than by the treatment I adopt. And even should it fail, (which I have never known,) it does not preclude the act of dividing the stricture. More time only is allowed to try the resources of nature and the powers of art, in whose favour, if we err at all, I have found it the most safe to err.

It would be very pleasing to me, had I room, to detail a number of cases which I have successfully treated, by pursuing this treatment. In one, which occurred some time ago in a very aged man, the practitioner who attended with me, decided that the hernia could not be reduced without an operation; and from its great magnitude, pain, &c., it appeared so; but, by persevering a few hours, I effected a reduction.

In concluding this chapter, I will relate a case recorded in the *Boston Medical Journal*, which shows what course nature alone, sooner or later, takes to cure hernia or rupture. Some practical inferences may, perhaps, be drawn from it.

*Remarkable case.*—A married woman, of middle age, on one of the islands below the harbour of this city, a short time since, had a strangulated hernia. An opening formed from the tumour, and a considerable portion of the intestine sloughed off. From the peculiar location of the woman, it became exceedingly difficult to obtain a physician, and her husband, therefore, as the only alternative, as he supposed, gave her enormous quantities of physic, before the sloughing took place.

There was a complete relief from pain, after the fæces began to discharge at the artificial opening, where they continued to pass off about ten days, when the orifice again closed, the discharges readily took a natural course, and the patient now remains in perfect health. We have understood she was not visited by any physician or surgeon, till after the cure was perfectly completed.—(*Boston Med. Jour.*)

## CHAPTER XXV.

### STRICTURES IN THE URETHRA.

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THERE are three kinds of stricture of the urethra; the permanent, the spasmodic, and the inflammatory.

*Permanent Stricture.*—The permanent stricture is the result of a thickening of the urethra from chronic inflammation.

An individual having permanent stricture, first observes a few drops of water remain after the whole seems to have been discharged; then notices a fine spiral or divided stream; and, lastly, discharges his water by drops only. In this last state, for the purpose of facilitating the escape of the urine and preventing its being retained by the lacunæ of the urethra, he draws out the penis with considerable force.

In cases of stricture, you will find, in all stages, that the appearances and nature of the urine will be according to the degree of inflammatory excitement.

When the inflammation has extended to the mucous membrane of the bladder, there will be a considerable quantity of mucus with the urine; the urine, when discharged, is as transparent as usual; but when it has cooled, the mucus sinks to the bottom, where it appears ropy, and adheres to the vessel. As the inflammation of the membrane increases, the urine becomes yellow on cooling. When the disease is of a very aggravated nature, the urine will become quite white. If the urine is bloody, it is a proof that the ulcerative process has commenced, and, if not bloody, on the contrary.

In that state of stricture when the urine is loaded with pus, the patient has frequent and severe rigours or chills, or even below that state of inflammation.

The person will have frequent shivering fits, so that you would suppose he had an intermittent fever. In these cases, opium is the best remedy.

Persons labouring under stricture, are sometimes severely afflicted with piles, and, not unfrequently, direct inguinal hernia, or rupture.

The last complaint is in consequence of the extreme force that is employed to evacuate the urine.

*Seat of Stricture.*—There is no part of the urethra which is not liable to stricture, but most frequently it is found in three situations: first, just at the beginning of the bulb; secondly, at the membranous part; and, thirdly, in the prostate gland itself.

A stricture does not always arise from an equal contraction of the urethra all round; for, in some instances, the contraction is only on one side.

*Cause of Permanent Stricture.*—The cause of permanent stricture of the urethra, is inflammation of the chronic kind, and in ninety-nine cases out of every hundred, it is the result of neglected gonorrhœa.

Chronic inflammation occasions a greater determination of blood to the part, and produces a deposition of adhesive matter on the outer side of the urethra ; the urethra itself becomes thickened, which, together with being pressed upon by the adhesive matter collected in the interstitial spaces surrounding the urethra, produces the stricture in question.

*Treatment of Permanent Stricture.*—There are three principal objects to be attended to : the first of which is, to cure the complaint by dilatation ; the second, by absorption ; and the third, to destroy it altogether.

The first is effected by mechanical means ; the second, by the influence of medicines ; and the third, by caustic.

The first, or cure by dilatation, is accomplished by means of bougies ; from the regular use of which, strictures may be readily cured, and the strictured part of the urethra made to regain its natural size.

Bougies are made of either wax, catgut or silver ; and they are usually numbered from one to sixteen, according to their dimension, so that the practitioner may, on each occasion, know the size he is using, and the size last used. Catheters are sometimes employed as a substitute for bougies, and answer the purpose tolerably well. Catgut bougies are only employed when the stricture is particularly small. With respect to wax bougies, before introducing them into the urethra, you should always warm them by the fire, for the purpose of rendering them soft ; when, if they are introduced into the urethra, and pass through the stricture, you will ascertain the distance at which it is situated from the orifice, and the form and size of the stricture will be modelled on the bougie. On the following day, you again introduce two bougies, that is, if there be no existing inflammation to prevent it. The first bougie you then use, is to be of the same size as the one with which you concluded on the previous day ; after this has been withdrawn, you again pass another, a size larger ; thus using, on every occasion, two bougies, always beginning with one of the same size as that with which you had concluded on each preceding occasion.

In endeavouring to pass a bougie, it now and then happens that the urethra is torn through ; and unless attention is paid to the circumstance, may give rise to a troublesome extravasation of urine.

When you suspect a tear of the urethra, immediately withdraw the instrument, and desire the patient, if possible, to retain his urine, that it may not irritate the wound, and also to prevent its escaping through the opening, and becoming extravasated in the surrounding cellular substance. In this way, you give time for a clot to form over the surface of the wound, a slight degree of inflammation is excited, and it becomes healed by the adhesive process, without any further mischief.

With respect to burning away strictures with escharotics, you must be particularly careful to prevent them getting in contact with any other part than where their presence is absolutely necessary.

*Spasmodic Stricture* arises either from a contraction of the muscles surrounding the urethra, or from the urethra itself.

The spasmodic stricture is usually more or less connected with permanent stricture, and the spasms commonly attack the muscular part of the urethra.



Spasmodic stricture may arise from various causes, and attacks individuals of all ages. Common accidents will sometimes give rise to it—an operation for an aneurism, &c.

The complaint usually comes on of a sudden, is unattended with pain, and the first notice that a patient has of it is, that he experiences a difficulty in voiding his urine.

*Treatment of Spasmodic Stricture.*—This must consist in the introduction of a bougie, and, if necessary, other surgical and medical means.

You should introduce a bougie, letting it steal gently along the urinary passage, and when it arrives at the strictured part, there let it rest for a short time; after this, you should gradually push it forward, using only a very slight force, but continuing that force until you have succeeded in passing the stricture. Let the bougie rest for a minute or two in the strictured part, and then withdraw it; directly after you do so, the person will be enabled freely to pass his urine.

*Inflammatory Stricture.*—This kind of stricture is generally produced by the inflammation of gonorrhœa; but there is another mode by which it is caused, and that is, the introduction of a bougie.

The passing of bougies, although done with care, will sometimes give rise to a violent inflammation of the urethra.

*Treatment of Inflammatory Stricture.*—Under this complaint, you must not think of introducing either a bougie or a catheter; but, by a regular and judicious antiphlogistic treatment, you will be able to afford relief.

The consequences of stricture of the urethra are very numerous. First, in very bad cases, a great dilatation of the urethra behind the stricture; secondly, a considerable thickening of the coats of the bladder; thirdly, enlargement of the ureters, an effect of their being distended with urine, during the retention common in the advanced stages of stricture; fourthly, the kidneys are often diseased, their glandular structure being sometimes entirely destroyed; lastly, the prostate gland is frequently enlarged, and abscesses are occasionally formed in it, with fistula leading from them to the perinæum or parts around, and its natural ducts are often considerably dilated.—(*Casile.*)

The different varieties of stricture have been mentioned, and the treatment briefly stated. But some additional remarks are deemed necessary.

I have found that a repeated introduction of different sized bougies, will remove the worst stages of stricture. Small ones should be first introduced, and successively larger ones, as before mentioned. After they have been introduced, they should remain for twenty or thirty minutes. If the urethra is very irritable in consequence of inflammation, *fomentations* must be applied to the perinæum, and cooling *diuretics* administered, such as *diuretic drops*, a decoction of *elm bark*, *marshmallows*, *linseed*, and the mucilage of *gum arabic*. *Physic* should also be given, and if these do not allay the irritability of the urethra, give *anodynes*. The *diaphoretic powders* are the best that can be given, in consequence of the *anti-spasmodic* and *diuretic* properties of the *opium* and *camphor* they contain. This treatment is applicable to other kinds of stricture, such as the *spasmodic* and *inflammatory*.

Some attempt has been made to cure strictures by *caustic*, and by cutting down to the seat of the stricture. But I have no confidence in either mode of treatment. The only sure method to remove any kind of stricture, is the repeated introduction of different sized catheters, aided by the exhibition of proper internal remedies. Although it may be somewhat difficult to introduce one at first, it can always be effected by perseverance, commencing with the use of the smallest size. Each introduction will become gradually less difficult.

For very small or close strictures, catgut bougies, or the smallest elastic gum catheters, are generally the best to commence with.

A little of the discutient, and if the parts be very irritable, the marsh-mallow ointment should be rubbed upon it when it is introduced.

These ointments contain cooling and discutient properties. If such resistance is met with, on the first introduction of the bougie, gradual pressure must be continued upon the stricture for some time, and in this way, the difficulty will shortly be overcome.

When the stricture is once passed, we have it, as it were, within our control.

Very little pain should be produced in the operation, and as soon as the patient complains much, it should be withdrawn. The size may be very gradually increased as the stricture dilates. A silver bougie passes, perhaps, as easily as any. Some recommend the bougie to be pushed with much force against the stricture, with a view to cure it by causing ulceration, but this is a cruel, unnecessary, and dangerous practice. A false passage is sometimes caused by it. When the instrument has been introduced a few times, and it passes readily, the patient himself may use it, under the superintendence of the practitioner.

I have applied the *vegetable caustic*, made in the form of small troches, and pushed them down upon the stricture by a catheter; but I am not yet prepared to speak of the effect, not having sufficiently tested it. But this kind of caustic causes no inflammation, and, if properly applied, it may be very efficacious. It certainly must be much better than *lunar caustic*, which is recommended by many surgeons, and which is conveyed to the stricture by an armed bougie. In the same manner the *vegetable caustic* might be applied, perhaps, better than any other way. Both this, and the mineral caustic, I am persuaded, will do better than the nitrate of silver.

## CHAPTER XXVI.

### SUPPRESSION AND RETENTION OF URINE.

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WHEN there is a frequent desire of making water, attended with much difficulty in voiding it, the complaint is called dysuria or stranguery; and when there is a total suppression of urine, it is known by the name of ischuria. Both ischuria and dysuria are distinguished into acute, when arising in consequence of inflammation, and chronic, when proceeding from any other cause, such as calculus, &c.

The causes which give rise to these diseases, are, an inflammation of the urethra, occasioned either by venereal sores or by a use of acrid injections, inflammation of the prostate gland, bladder, or kidneys, considerable enlargements of the hæmorrhoidal veins, a lodgment of indurated fæces in the rectum, spasm at the neck of the bladder, exposure to cold, the absorption of cantharides applied externally or taken internally, excess in drinking either spiritous or vinous liquors, or particles of gravel sticking in the neck of the bladder, or lodging in the urethra, and thereby producing irritation. Gout, by being translated to the neck of the bladder, will sometimes occasion these complaints. In many instances the obstruction to the flow of urine is in a great measure owing to a diseased action of the muscles; in some of them it is entirely to be attributed to this cause.

A very frequent cause, however, of a retention of urine, is, an enlargement or other diseased state of the prostate gland, a complaint with which men in advanced life are very apt to be afflicted. It is usually excited by full living of every kind, inebriety, indulging to excess with women, or producing frequent excitement in the seminal vessels by masturbation, severe attacks of gonorrhœa, a confined state of the bowels, and exposure to cold. Indeed, whatever increases the circulation of the blood in these parts beyond the healthy standard, may become a cause of inflammation in this gland, the blood vessels of which lose their tone in an advanced period of life.

In dysuria there is a frequent inclination to make water, attended with a smarting pain, heat and difficulty in voiding it, together with a sense of fulness in the region of the bladder. The symptoms often vary, however, according to the cause which has given rise to it. If it proceeds from a calculus in the kidney or ureter, besides the affections mentioned, it will be accompanied with nausea, vomiting, and acute pains in the loins and region of the ureter and kidney of the side affected. When a stone in the bladder or gravel in the urethra is the cause, an acute pain will be felt at the end of the penis, particularly on voiding the last drops of urine, and the stream of water will either be divided into two, or be discharged in a twisted manner, not unlike a cork-screw. If an enlargement or scirrhus, or the prostate gland has occasioned the suppression or difficulty of urine, a hard

indolent tumour, unattended with any acute pain, may readily be felt in the perinæum, or by introducing the finger in ano.

"Dysuria" says a writer, "is seldom attended with much danger, unless by neglect it should terminate in a total obstruction. Ischuria may always be regarded as a dangerous complaint when it continues for any length of time, from the great distension of the bladder, and often consequent inflammation which ensues. In those cases where neither a bougie nor a catheter can be introduced, the event in all probability will be fatal, as few patients will submit to the only remaining means of drawing off the urine, before a considerable degree of inflammation and tendency to gangrene have taken place." But no such case have I ever had in all my practice.

### *Treatment.*

When dysuria has arisen in consequence of the application of a blister, as sometimes happens, nothing more will be necessary than to direct the patient to drink plentifully of warm diluent liquors, such as a thin solution of gum Arabic, linseed tea, marshmallow decoction, or barley water. When it proceeds from any other cause, and the symptoms are violent, besides the means just mentioned, flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with warm water, should be kept constantly applied over the region of the pubes; and emollient clysters should be injected frequently, both with the view of acting as an internal fomentation, and of dislodging any indurated fæces that may be collected, and which, by their pressure and stimulus, will of themselves often produce a strangury, or difficulty of making urine.

I have found it exceedingly useful to steam the patient over a strong decoction of bitter herbs, as recommended in several other complaints. Both the decoction and the herbs should be thrown into a suitable sized vessel, and a blanket put around the waist of the patient, that the steam may be applied more immediately to the seat of the disease. At the same time let his feet be immersed in warm ley water, and let him drink freely of parsley tea. After he has been steamed fifteen or twenty minutes, let the herbs be enclosed in flannel, and applied over the region of the bladder, to be often renewed, and applied as hot as can be borne. This will usually produce such a relaxation of the parts as to cause a free discharge of urine. The patient may also take the following: take a wine-glassful of the best Holland gin; add to it a tumbler of spearmint tea, and two teaspoonsful of spirits of nitre; sweeten with honey, and drink the whole. The same portion should be taken every hour until relief is afforded. Where the pain is very exquisite, 40 drops of laudanum may be added to each dose. In half an hour, or an hour, this treatment, in almost every case of retention of urine, will afford relief.

If the suppression of urine does not give way to the means advised, the patient should be put into a warm bath; and, having kept him in for about ten minutes or a quarter of an hour, he is then to be taken out, and the introduction of a silver catheter, or one of flexible gum, to be attempted.

In all cases it will be necessary to introduce the catheter with gen-



tleness; even a moderate force, improperly directed, is capable of injuring the urethra in such a manner as to render the operation almost impracticable; and it must be obvious to every surgeon, that long-continued and violent attempts have a tendency to increase the inflamed state of the urethra; but besides this, a laceration of its membranous parts is apt to arise, so as to endanger the making of an artificial passage by the catheter.

In a suppression of urine proceeding from an enlarged or diseased state of the prostate gland, and where there is a fulness in the region of the bladder, with a turgidness of the parts, no time should be lost in introducing the catheter and drawing off the water. In doing this, three things are, however, to be attended to:—1st. To avoid bringing on spasms of the urethra; 2dly. To conduct the point of the instrument over the prominence at the neck of the bladder; and, 3dly. To employ an instrument that is fitted to be retained in the bladder, should much difficulty have occurred in the introduction, as less disturbance is likely to arise from an instrument remaining therein, than will be produced by repeating the operation of introducing it, where any degree of violence is committed upon the parts.

The instrument should be soft and smooth, round at the point, and as large as the canal will easily admit, that it may more readily disengage itself at the turn into the bladder: the apertures in its side should be wide, to render them less liable to be clogged with mucus or blood, and it should be pliant, that it may adapt itself to the form of the parts, and give little disturbance while retained: another desirable property for it to possess, is a permanent curvature at the point, even to a greater degree than is usually given to the common silver catheter. The only instrument which possesses these requisites is the elastic gum catheter.

In some cases of an enlargement of the lobes of the prostate gland, even a flexible gum catheter with a stilet cannot pass along the urethra on account of spasms; but by having given it a considerable curvature by its being kept a sufficient time upon a stilet, and then introducing it in a flexible state without the stilet, we shall succeed, and be able to draw off the water. Hard metallic instruments should never be employed in cases of diseased prostate, when others will answer the purpose.

The catheter, in cases of diseased prostate, should be introduced either towards the left or right side, with the handle nearly in a horizontal line; and when it reaches the membranous part of the urethra, the handle should be gently and gradually brought towards the perpendicular line, the point all the time being kept in motion; and when it is nearly upright, the handle should be depressed. When the flexible catheter has no stilet, a good deal of dexterity is often required. If the catheter without the stilet cannot be made to pass, it ought to be tried with one, and if it is still prevented from going on, by introducing a finger into the rectum, and pressing upon the curved point of the catheter, we may give it a right direction, so as to guide it into the bladder. When necessary, a moderate external pressure must be employed, and in other instances, the stilet may be used.

Where there is inflammation, accompanied by inordinate irritation at the neck of the bladder, all straining to expel the urine should be avoided, and the organ be emptied every six hours, by introducing the elastic gum catheter, and afterwards washing it out with a little tepid water, injected through the catheter by means of a gum-bottle properly fitted thereto. By so doing we shall soothe the irritability of the parts, by substituting tepid water for the acrid urine. In the healthy state of the parts connected with the bladder, the surface is not susceptible of the stimulus from the urine, or in only due degree; but when inflammation occupies these parts, the acrid urine becomes a continual source of excitement. Besides, by thus injecting the bladder, the ropy mucus and purulent secretion, when there is any, are washed away, and that sort of tenesmus vesicæ caused by their presence, is much relieved.

In every instance of suppressed urine, whether arising from stricture, gravel, inflammation, an enlarged state of the prostate gland, or spasm, opiates will prove highly serviceable, and ought therefore to be administered not only by the mouth along with diuretics of a mild or bland nature every four hours, but likewise in clysters repeated frequently. The liquor potassæ, in doses of from twenty to thirty drops, joined with tincture of opium, the patient drinking freely of mucilaginous liquors, such as linseed tea, parsley, elm bark, or barley water, in which a little gum Arabic has been dissolved, is a very useful remedy in all cases of irritation at the neck of the bladder.

Injecting sweet oil, or even warm milk and water, frequently up the urethra, will often afford relief, especially if the suppression has been occasioned by a small piece of gravel which has stuck in the canal. Injecting tepid water into the bladder itself in similar cases by the apparatus before mentioned, will also afford great relief in such cases.

In both ischuria and dysuria, arising from gravel or a stone in the bladder, besides adopting this step, we should have recourse to the means advised expressly under these heads.

Where the patient is frequently troubled with strangury, he should take the urinary decoction, diuretic drops, infusions of spearmint, slippery-elm, flaxseed, &c.

I have been called to patients when they have nearly lost their senses from the excruciating pain arising from a retention of urine, and after putting this practice in execution, they have experienced almost instantaneous relief. The transition from acute suffering to relief, has been truly surprising to all who have witnessed it; and the feelings of the patient can be more easily conceived than described.

On one occasion, a person with spasmodic stricture, had retained his urine so long, that the flesh above the pubis had turned black. Several attempts had been made to introduce the catheter, but all were unsuccessful. Medicine was given, *warm bath* and *injections* used, when the *catheter* most easily entered the bladder and evacuated its contents.

I have been called when the patient has been groaning and screaming from distress by severe agony, and in a short time the sufferings have been removed, and that, too, without the introduction

of the catheter. And, as for puncturing the bladder above the pubis, or by the rectum, I consider it cruel and unnecessary.

The following case is translated from a late work published in Canada, and which may be of practical importance.

*A case of Retention of Urine from Stricture of the Urethra, related by M. Amussat.—(Quebec Med. Jour. 1827. No. V. p. 60.)*

A man, aged seventy years, of a plethoric constitution, thirty years previous, had had three attacks of gonorrhœa, and ever since has had considerable difficulty in discharging his urine, not being able to eject more than one or two ounces at a time. At 8 o'clock, P. M., he made an effort to void his urine, without success, which caused him most excruciating pain. His pulses were agitated, face flushed, his abdomen distended, the lower part much tumefied; the subcutaneous abdominal veins distended, and a partial priapism. His efforts to void his urine were extremely painful and fruitless. The following day, at 10 o'clock, A. M., M. Amussat introduced a bougie, which was arrested by the bulb of the urethra, and brought a trifling quantity of blood. The urine had now been retained for fourteen hours, though he was accustomed to pass it as much as twelve or sixteen times every night. The obstruction was such, that there seemed to remain no other alternative than either to forcibly introduce the catheter, or to puncture the bladder. M. Amussat finally had recourse to a method which completely succeeded without putting his patient to the pain of either of the other operations. He injected gradually, but with force, warm water into the urethra, which, in dilating the orifice of the stricture, freed the urethra from the thickened mucus which was an additional obstruction. As soon as the injected liquid had reached the urine, the patient cried out he was cured, and the flow of urine returned, as heretofore. At two efforts he voided about two pints of muddy urine. Since, he has had no retention, and continues in good health.

If this method is confirmed by experience, of which I have no doubt, it will be of great value in the treatment of strictures.

## CHAPTER XXVII.

### GRAVEL AND STONE.

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#### SECTION I.

#### GRAVEL.

#### *Description.*

By the term gravel, we understand a collection of sand, or small particles of stone, collected in some part of the body, in the kidneys, ureters, or the bladder.

#### *Causes.*

There is, no doubt, contained in our food and our drink, the agents which form the gravel and stone. There is a sufficient quantity of sand, either in a native state, or combined with other substances, to produce or to form calculous affections. When the system is healthy, these ingredients are carried off by the proper secretions of the system. But, when there is debility of any organ, especially the kidneys, they become incapable of expelling such sandy concretions, and consequently they lodge in the kidneys, ureters, or bladder.

In general, these minute portions of gravel pass off, without occasioning much disturbance or disease. But, if there be an excess of uric or any other acid, a chemical union takes place, and these particles of stone are united, or combined together, and there is a constant apposition, until they become considerably large, or a stone is formed. This stone, or stones, may be deposited in the kidneys or ureters, and give rise to inflammation of these organs; or, it may pass down into the bladder, and, if not discharged, constitute all the symptoms of stone.

"The *causes*," says Gibson, "of the formation of urinary calculi, although frequent attempts have been made to investigate them, have never yet been unravelled. We know, indeed, little beyond this, that the disease prevails in certain countries and districts, more than in others; and that, in some climates, especially very warm ones, it does not exist. Throughout the United States, which embrace a very extensive tract of country, fugitive cases may be every where seen; but, upon the whole, the complaint must be considered by no means common, if we except some portions of the western country, especially Kentucky, Alabama and Tennessee, where it is exceedingly frequent, and usually attributed to the use of lime-stone water.

All substances, containing azote, furnish matter for the formation of uric acid,\* into which it is readily transformed, and tends to the pro-

\* See Dr. Magendie's *Physiological and Medical Researches into the Causes of Gravel*.



duction of gravel. The use of animal food and other analogous aliments, tends to diminish the quantity of urine, at the same time that it increases the proportion of uric acid; whereas, a vegetable diet has the contrary effect.

Those who are in the decline of life, and who have been much engaged in sedentary employments, as likewise those who are much afflicted with the gout, are in general very subject to nephritic complaints; but, it is a matter of notoriety, that the period of life from infancy to about fifteen years, is most subject to the formation of calculi in the bladder, and that the children of the poor are afflicted in a greater proportion than those of the opulent. From the difference in the structure of the urinary passages in the sexes, men are much more liable to them than women. In warm climates, we seldom meet with instances of calculous concretions forming of any size, either in the kidneys or bladder, as the particles of sand deposited from the urine, usually pass off before they can adhere together, owing to the relaxed state of the parts; but in cold ones, they are found frequently of considerable magnitude.

Excess of urea is not unfrequently met with, especially in children and persons depositing the phosphates. In these cases, the urine is generally pale, but sometimes high-coloured, like porter and water mixed. When recently voided, it reddens litmus paper, and is for the most part free from sediment.

It is stated that a long use of fermented liquors, and of wines abounding with tartar, may possibly, in some constitutions, prove occasional causes of the gravel and stone. Intemperance, by producing debility, may occasion gravel.

### *Symptoms.*

Where urea is in excess, there is usually a frequent and almost irresistible desire of voiding the urine; but this does not arise from a fulness of the bladder; for, in general, only a small quantity is voided at one time, but, from the frequency, the total quantity voided in a given time not being greater than natural. In cold weather the quantity is augmented, and it is also increased by all causes producing mental agitation. There is often a sense of weight, or dull pain in the back, and an occasional irritation about the neck of the bladder, which now and then extends along the urethra. The pulse, however, is not affected, and the tongue is clean: there is no remarkable thirst, nor are the functions of the stomach and bowels much deranged.

A fit of the gravel is attended with a fixed pain in the loins, numbness of the thigh on the side affected, nausea and vomiting, and not unfrequently with a slight suppression of urine. As the irritating matter removes from the kidney down into the ureter, it sometimes produces such acute pain as to occasion faintings and convulsive fits. The symptoms often resemble those of nephritis, or inflammation of the kidneys; but the deposition of reddish-brown sand, or very fine powder of the same colour, in the urine on becoming cold, will demonstrate the difference.

When gravel has once formed in the pelvis of the kidney, or

elsewhere, it continues to increase, by receiving on its surface new layers of uric acid successively precipitated; of which we may be convinced by cutting the concretions transversely, which enables us to perceive that they are almost entirely composed of concentric layers.

One of the principal diagnostic symptoms of calculus in the kidney is the dark appearance of the urine, as if it were mixed with coffee grounds, evidently depending on broken down particles of blood, proceeding from the obscure but continued irritation of the kidney. When this occurs in conjunction with a dull, heavy pain in the loins, there can be very little doubt of the presence of calculus in the kidney. In mere inflammation of this organ, when no calculus is present, the urine does not put on the above appearance.

The symptoms which attend on a stone in the bladder are, a frequent inclination to make water, which flows in a small quantity, is often suddenly interrupted, and is voided towards the end with pain in the glans penis. The patient, moreover, cannot bear any kind of rough motion; neither can he make use of any severe exercise, without enduring great torture, and perhaps bringing on either a discharge of bloody urine, or some degree of temporary suppression. With these symptoms he experiences pain in the neck of the bladder, tenesmus, itching and uneasiness in the anus, frequent nausea, and sometimes a numbness of one or both thighs, with a retraction of one of the testes.

The long-continued irritation of the coats of the bladder by the stone, produces a considerable thickening in their substance, but principally in the muscular coat, the packets of its fibres becoming large, and incapable of that dilatation which they formerly possessed: their irritability, however, increases, so that they are excited to contract upon a few drops of urine, and thus, by pressing the stone against the part, already too sensible to pain, an almost constant state of suffering is kept up. The bladder in time becomes more diseased, the inner coat constantly inflamed, and sometimes ulcerated: all the unfavourable constitutional symptoms increase, and unless the stone is removed, the patient's sufferings are only ended by death.

Disordered affections of the prostate gland are those which, without proper attention, are most likely to be confounded with stone in the bladder. One mark of distinction which the practitioner will do well to attend to is, that in the prostate affection, the pain experienced in making water will be always in the commencement of micturition, while, on the contrary, it is most usually during the passage of the urine, or when the bladder is nearly emptied, that pains and obstructions are perceived in cases of calculus. Another important diagnostic of stone is, that the irritation which it induces does not so much affect the general health as the same degree of local disturbance from other causes.—(Thomas.)

### *Treatment.*

In treating this disease, great success must be to be expected, if the gravel from the system, which sometimes accumulates, and, first, by relaxing the parts

which are the seat of the affection, and, second, by administering stimulating diuretics. If we are called to treat a fit of the gravel, the most speedy way of giving relief will be to administer an *opiate*, the *black drop*, or an opium pill; the doses to be in proportion to the urgency of the symptoms. This medicine will so far diminish the sensibility of the parts, and at the same time take off the tension or relax them, that the spasms or fit will be allayed. There is usually very severe pain across the kidneys, proceeding from the irritation of the calculus. When this symptom occurs, fomentations will be found very useful. *Hops* and *wormwood*, simmered in vinegar, must be repeatedly applied, and it will be found of great service to throw the patient into a free perspiration; to effect which, let the feet be bathed, and a strong infusion of *spearmint* tea be given; this plant has a tendency to allay the vomiting, to produce perspiration, and at the same time promotes a discharge of urine; and, should it be necessary, the vapour bath may be used. If there is a strangury, or difficulty of passing the water, the *spirits of mint* may be freely given, combined with the *spirits of nitre*.

The spirits of mint is made by pounding or bruising the green plant (spearmint) to a pulp or soft mass, then adding sufficient of the first runnings from the still of Holland gin, to make a saturated tincture. The watery portion will so far dilute the gin, that it may be taken without the addition of any menstruum. This is to be given as often, and as much as the patient can bear. No fear need be apprehended of inflammation arising from the stimulating properties of this medicine. There is no other preparation with which I am acquainted, so exceedingly efficacious in producing the discharge of urine, as the above, in retention from any cause. I was lately called to a case where two physicians exerted their skill in vain, in case of a retention of urine from gravel and calculi, and after giving this preparation, or a similar one, all the symptoms of the complaint subsided in a very short space of time.

Having none of the medicine then prepared, I went into the garden, and broke off a quantity of the tops of the plant, bruised it, and put it into a quart bottle, and then filled it up with best Holland gin. Of this I directed the woman to take about a wineglassful, (whether with the addition of the spirits of nitre, or otherwise, I cannot now say,) as often as the stomach would bear. The effect of the medicine was almost immediate. Although she was exceedingly reduced from pain, arising from a long retention of urine, but a very short time elapsed before she was better.

Nor was she, like too many in this day, ungrateful for the benefit received. In addition to the commendation bestowed, when I presented my bill, she most promptly produced a bag of silver, and evinced, by her manner and feelings, a disposition to pay double the amount. But, alas, where we find one patient of this description, we find five, even after we have cured them of some desperate disease, who, instead of manifesting gratitude for the favour conferred, refuse to pay, and probably will even censure.

Where the case is desperate, it may be necessary to use the warm bath, to produce sufficient relaxation to afford relief. The patient



should take mucilaginous and diluent drinks: such as *slippery-elm*, *parsley*, &c. *Physic* should also be given, and, in some cases, *emollient injections* will be required.

After the urgent symptoms have been removed, and the ordinary symptoms of gravel exist, a teaspoonful of the *diuretic drops* should be given, two or three times a day, in a tumbler of *wild carrot tea*; and, at the same time, let the person drink the following decoction.

Take *marshmallows*, three ounces;

*Queen of the meadow*, (*spiræa ulmaria*,) three ounces;

Add four quarts of water; boil to one; then add two ounces of gum Arabic, and half an ounce of nitre, (*nitras potassæ*.)

The dose is a teacupful, four or five times a day. It may be sweetened with honey. If nausea and vomiting attend the complaint, give the solution of the *bicarbonate of potash* or *salaratus*. This also has a tendency not only to allay the vomiting, but also to remove the calculous affection.

Many persons have found great benefit from the use of *Hærlém oil*, but most that is now sold is counterfeit or spurious. I am acquainted with but one place, in New York, where it can be obtained pure, (*Van Antwerp & Co.*) I know not exactly the component parts of this medicine, but believe it to be principally the product of the pine, tar and balsam of sulphur.

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## SECTION II.

### *Stone.*

#### *Symptoms.*

The symptoms of a stone in the bladder are, a sort of itching along the penis, particularly at the extremity of the glans; and hence the patient often acquires the habit of pulling the prepuce, which becomes very much elongated; frequent propensities to make water, and go to stool; great pain in voiding the urine, and difficulty of retaining it, and often of keeping the fæces from being discharged at the same time: the stream of urine is liable to stop suddenly, while flowing in a full current, although the bladder is not empty, so that the fluid is expelled by fits as it were; the pain is greatest towards the end of, and just after the evacuation; there is a dull pain about the neck of the bladder, together with a sense of weight or pressure at the lower part of the pelvis: and a large quantity of mucus is mixed with the urine; and sometimes the latter is tinged with blood, especially after exercise.—(*Sharp, Earle, Sabatier.*)

Frequently (says Desehamps) a patient will have a stone in his bladder a long while without the occurrence being indicated by the symptoms. (See *Case in Howship on Complaints affecting the Secretion and Excretion of the Urine*, p. 125.) Most commonly, however, the presence of the stone is announced by pain in the kidneys, more especially in adults and old persons; children scarcely ever suffering in this way, because in them the stone is hardly detained in the kidneys and ureters at all, but descends immediately into the bladder.

It seldom happens that calculous patients void blood with their urine before the symptoms usually caused by the stone have taken place.



It is not till after the foreign body has descended into the bladder, acquired some size, and presented itself at the orifice of that viscus, that pain is occasioned, particularly when the surface of the stone is unequal. The patient then experiences frequent inclination to make water, attended with pain. The jolting of a carriage, riding on horseback, and much walking, render the pain more acute. The urine appears bloody, and its course is frequently interrupted, and sabulous matter, and particles of stone, are sometimes discharged with it. The want to make water becomes more frequent and more insupportable. The bladder is irritated and inflamed, its parietes become thickened and indurated, and its diameter is lessened. A viscid, more or less tenacious matter is observed in greater or less quantity in the urine, and is precipitated to the bottom of the vessel. The urine becomes black and putrid, and exhales an intolerable alkallescent smell, which is perceived at the very moment of the evacuation, and is much stronger a little while afterward. The patient can no longer use any exercise without all his complaints being redoubled. Whenever he takes much exercise the urine becomes bloody; the pain about the hypochondria, which was dull in the beginning, grows more and more acute; the ureters and kidneys participate in the irritation with the bladder; they inflame and suppurate, and very soon the urine brings away with it purulent matter. The fever increases, and changes into one of a slow type; the patient loses his sleep and appetite, becomes emaciated and exhausted; and death at length puts a period to his misery. (*See Traité Historique et Dogmatique de l'Operation de la Taille, par J. F. L. Deschamps, t. i. p. 163. Paris, 1796.*)

It is acknowledged by the most experienced surgeons, that the symptoms of a stone in the bladder are exceedingly equivocal, and may be produced by several other disorders. "Pain in making water, and not being able to discharge the urine without the fæces, are common consequences of irritation of parts about the neck of the bladder, from a diseased prostate gland, and other causes. The urine stopping in a full stream is frequently caused by a stone altering its situation so as to obstruct the passage; but the same thing may happen from a tumour or fungus in the bladder. I have seen an instance of this, where a tumour, hanging by a small pedicle, would sometimes cause obstruction, and by altering the posture would retire and give a free passage. The dull pain at the neck of the bladder, and the sensation of pressure on the rectum, are frequently owing to the weight of the stone, &c.; but these may proceed from a diseased enlargement of the prostate gland. Children generally, and grown persons frequently, are subject to a prolapsus ani, from the irritation of a stone in the bladder; but it will likewise be produced by any irritation in those parts."—(*Earle.*) The rest of the symptoms are equally fallacious; a schirrous enlargement of the os tincæ and disease of the kidneys may occasion a copious quantity of mucus in the urine, with pain, irritation, &c. "The least fallible sign," says Sir James Earle, "which I have remarked, is the patient making the first portion of urine with ease, and complaining of great pain coming on when the last drops are expelled. This may readily be accounted for, from

the bladder being at first defended from contact with the stone by the urine, and at last being pressed naked against it. But to put the matter out of all doubt, and actually to prove the existence of a stone in the bladder, we must have recourse to the operation of sounding."

A stone in the ureter or kidneys, or an inflammation in the bladder from any other cause, will sometimes produce the same effects: but if the patient cannot urinate, except in a certain posture, it is almost a sure sign that the orifice of the bladder is obstructed by a stone. If he finds ease by pressing against the perinæum with his fingers, or sitting with that part upon a hard body, there is little doubt the ease is procured by taking off the weight of the stone; or, lastly, if, with the other symptoms, he thinks he can feel it roll in his bladder, it is hardly possible to be mistaken; however, the only sure judgment is to be formed from searching.

An enlarged prostate gland is attended with symptoms resembling those of a stone in the bladder; but with this difference, that the motion of a coach, or horse, does not increase the grievances when the prostate is affected, while it does so in an intolerable degree in cases of stone. It also generally happens, that the fits of the stone come on at intervals: whereas the pain from a diseased prostate is neither so unequal nor so acute.—(*Sharp, in Critical Inquiry*, p. 165. 4th. edit.)

Though, from a consideration of all the circumstances above related, the surgeon may form a *probable* opinion of there being a stone in the bladder, yet he must never presume to deliver a *positive* one, nor ever be so rash as to undertake lithotomy, without having greater reasons for being certain that there is a stone to be extracted. Indeed, all prudent surgeons, for centuries past, have laid it down as an invariable maxim, never to deliver a decisive judgment, nor undertake lithotomy, without having previously introduced a metallic instrument, called a sound, into the bladder, and plainly felt the stone.—(*Cooper*.)

I know of at least seven cases, and at two of them I was present, where the patients were subjected to all the torture and perils of this operation, without there being any calculi in their bladders. The maxim, therefore, cannot be too strictly enforced, that the operation ought never to be attempted, unless the stone can be *distinctly* felt with the sound or staff. In one of the examples, of which I was a spectator, not only the symptoms, but the feel which the sound itself communicated when in the bladder, made the surgeons imagine that there was a calculus, or some extraneous body in this organ. Most of the above cases, I understand, recovered, which may be considered fortunate; because, when the stone cannot be found, the disappointed operator is apt to persist in roughly introducing his fingers and a variety of instruments, so long, in the hope of catching what cannot be got hold of, that inflammation of the bladder and peritoneum is more likely to follow, than when a stone is actually present, soon taken out, and the patient kept only a short time upon the operating table.—(*Cooper*.)

In a valuable practical work, is recorded an instance, in which what is called a horny cartilaginous state of the bladder made the sound communicate a sensation like that arising from the instrument actually

touching a stone, and the surgeon attempted lithotomy. This patient unfortunately died in twenty-four hours.—(See *Desault's Parisian Chir. Journal*, vol ii. p. 125.)

However, were the symptoms most unequivocal, there is one circumstance which would always render it satisfactory to touch the stone with an instrument, just *before* the operation, I mean the possibility of a stone being actually in the bladder to-day, and *not to-morrow*. Stones are occasionally forced, by the violent contractions of the bladder, during fits of the complaint, between the fasciculi of the muscular coat of this viscus, together with a portion of the membranous lining of the part, so as to become what is termed encysted. Or, as there is reason to believe, the cyst is sometimes produced first, and the calculus is formed in it, as a kind of effect of the existence of the separate pouch. The opening into the cyst is frequently very narrow, so that the stone is much bigger than such orifice, in consequence of which, it is impossible to lay hold of the extraneous body with the forceps, and the operation would necessarily become fruitless.—(*Sharp's Critical Inquiry*, p. 228. 4th. edit.)

#### *Treatment.*

A great variety of means have been recommended for the removal of this most formidable disease. The ingenuity of physicians has been much puzzled to find out some agents that would have the power to dissolve the stone; and although some may possess considerable virtue, it is pretty evident, that as yet there has been discovered no specific. Lime-water, alkalies and various diuretic articles have been extolled, but all have proved unavailing. Various liquids have been injected into the bladder, in order to dissolve the stone, but none, I believe, has been attended with much benefit.

It would appear that all internal medicines prove ineffectual, in consequence of their acting only by sympathy, and therefore not proving sufficiently powerful, or if they enter the circulation, they still prove insufficient.

The most reasonable theory given of the formation and cure of the gravel and stone, where it is effected, is given by Dr. Perry. He states, that all that internal medicine can do, is to prevent any future apposition of the stony concretions, by exciting a healthy action of the urinary organs, and then depending entirely upon the power of the urine alone to dissolve the stone; and, in all probability, it is in this way that medicine, when taken internally, proves efficacious in the disease. In this manner, unquestionably, many persons have been cured of stone in a very aggravated form, and the medicine given has acquired the character of a solvent.

Some years ago, I was called forty or fifty miles from this city, to see a lady labouring under a fistula. On my passage there, a gentleman stated to me that he had been for a length of time afflicted with a stone in the bladder, and that he had been entirely cured of it by taking a tea of a simple plant, which was the wild carrot (*dancus sylvestris*.) He voided forty-seven large pieces of stone, part of which he exhibited to me, and the other pieces, he said, were in the hands of



a physician in the city of New-York. He made a strong decoction of the top or seeds of the plant, and drank it freely and very warm, and continued the use of it a length of time. He stated also, that he had found that when the stone produced a retention of the urine, he avoided the difficulty by laying upon his back or in a recumbent position, by which the stone was thrown to the posterior part of the body, and he was enabled to make water by turning on one, or the other side.

The course which has been recommended in the preceding complaint, the gravel, should be first thoroughly tried in this disease, and if this should not prove effectual, I should recommend the patient to submit to the use of the instrument called the LITHONTRIPTOR, employed for crushing the stone in the bladder, by which the horrible and dangerous operation of lithotomy, or cutting open the bladder, is rendered unnecessary.

According to some accounts, it was invented by M. Le Roy d'Etioles, but first brought into much notice by the exertions of Dr. Civiale, of Paris. It is not for me to enter into the dispute concerning the degree of merit which may belong in this subject to each of these gentlemen, or to Baron Houteloup, who has warmly defended the priority of M. Le Roy's claim, at the same time that he has himself contributed very much to the perfection of the instruments and the success of the practice. The lithonriptor consists of a straight silver catheter of considerable diameter, and enclosing another of steel, the lower extremity of which consists of three branches, calculated to grasp the stone, on withdrawing the steel catheter a short way within the outer one, when they become approximated. The cavity of the inner catheter is capable of admitting a steel rod, to which may be affixed, at the surgeon's option, a simple quadrangular drill, or a strawberry-shaped file, or a trephine. By means of a spring the latter part of the apparatus is pressed evenly inwards, and it is made to revolve with velocity through the medium of a bow, after the manner of a common hand-drill. Chaussier and Percy were requested by the Royal Academy of Medicine at Paris, to examine the merits of this new invention, and to draw up a report on the subject. "This report (as a respectable journal states) speaks in very strong terms of the success which the reporters witnessed in repeated trials by the inventor; and there can be no doubt, from the distinct and precise evidence adduced by them, that none of the means previously suggested for the same purpose can compete with the instrument now proposed. The first case in which the reporters witnessed its application, was that of a man thirty-two years old, who had a mulberry calculus of considerable size. The experiment was made in presence of Chaussier, Percy, Larrey, and several other surgeons of eminence. The instrument having been introduced, and the stone caught at the first attempt, 'at every stroke of the bow those present heard a crackling sound, which announced both the hardness of the stone and the rapidity of its demolition.' The operation was continued, at occasional intervals, for forty minutes, during which the patient complained rather of uneasiness than of decided pain. The instrument was then withdrawn, and the patient immediately discharged with his



urine a quantity of powdery detritus, which was supposed to form a third part of the stone. The operation was renewed eleven days afterward, in presence of the same persons, and of Magendie and Serres; and again, a third time, ten days afterward. The quantity of powdery matter then discharged, appeared to be equivalent to the size of the stone, and no calculus could be afterward discovered in the bladder by the most careful sounding. The second case was that of a man affected with a calculus, of which the nucleus was a kidney-bean. The urethra had been previously dilated by the successive introduction of sounds of larger and larger diameters. The sound caused in this instance was dull and obscure. The bladder being irritable and disposed to contract, the operation was continued for a shorter period than in the former case, and was resumed every third day. Four operations removed the whole of the stone, the patient being sounded after the fourth by one of the most dexterous lithotomists in Paris. The stone in this case came off in sundry particles, and little fragments loosely agglutinated by a viscous animal matter. At the third operation, the forceps caught and brought away the bean, deprived of its epidermis; and at the next, the crust came away with the remaining fragments of the stone. In the third case, the stone was of the size of a pigeon's egg, and moderately hard. After three operations, the cure, at the period of the delivery of the report, was considered as nearly completed. Nothing unusual occurred in this case, except that, on one occasion, the operator failed in catching hold of the stone. The plan is evidently inadmissible when the stone is too large to be seized with the forceps, when it is adherent, encysted, or formed on a nucleus of a metallic or bony nature."—(See *Arch. Gén. de Méd.*, May, 1824, and *Edinb. Med. and Surg. Journ.*, Jan. 1825.)

This invention, certainly, is a great desideratum, and a very important one; for the idea of undergoing a surgical operation by the knife for a stone, is most appalling, and by most persons is dreaded more than the disease itself. The objections to the operation are certainly very serious. About one fourth, it may be computed, die of it, and often the bladder is opened and no stone found; and even if one or more is taken out, the same causes still remaining in the system, are very liable to reproduce the complaint.

From the success which has attended this ingenious invention, by those who well understand it, I confidently hope that this dreadful operation will hereafter be dispensed with.

I speak with confidence on this subject, because I have had an opportunity of witnessing and learning the treatment and operation, as practised by an ingenious French surgeon.

Of thirty patients operated upon by M. Civiale, since the month of April of the year just mentioned, twenty-five have been cured, and the remainder were still under treatment when the memoir was published. Among the former, was a lad seven years of age, in whom the operation was attended with great difficulty, by reason of the imperfect developement of the parts, and the irritability of the patient; every obstacle, however, was surmounted; the stone, of the size of an almond, and composed of oxalate of lime, was perforated, and extracted in three sittings of ten minutes each.—(Cooper.)

The author asserts that the reproduction of the calculi, is not more frequent after lithotripsy, than the common operation of lithotomy ; and if the reverse should appear to be the case, it arises, according to him, from the fatality attending the latter, which must of course diminish the number of relapses. *A priori*, we might suppose they would occur more frequently after lithotripsy, in consequence of some small fragments being left in the bladder, which would thus serve as nuclei to fresh formations ; but this is in a great measure obviated by the construction of the instruments, which affords great facility of extracting small bodies. In proof of which, M. Civiale states, that he has removed pieces of straw, and other substances equally minute, which had served as nuclei.—(*Nouv. Biblioth. Med.*)

Should this instrument, and the means recommended, fail of performing a cure, I cannot conscientiously recommend the operation of lithotomy as practised in this day. There is one, however, that might, under some circumstances, be justifiable, and which I consider to be altogether preferable to that now adopted. It is the ancient method practised by Celsus, being safe, more simple, altogether less painful, and more certain, and may even be performed on children without causing great irritation or much hazard ; and we have the best authority for stating, that nothing but the simplicity and the success attending it, in the hands of every one who thought proper to make use of the method, induced surgeons to abandon it, and to substitute in its place the common operation of lithotomy. Interest, and new and complicated inventions, then, were the cause of its falling into disuse.

I will now describe this method, as practised by the ancients.

#### *Apparatus Minor Cutting on the Gripe, or Celsus' Method.*

The most ancient kind of lithotomy was that practised upwards of two thousand years ago by Ammonius, at Alexandria, in the time of Herophilus and Erasistratus, and by Meges at Rome, during the reign of Augustus ; and, being described by Celsus, is named *Lithotomia Celsiani*. As the stone, fixed by the pressure of the fingers in the anus, was cut directly upon, it has been called *cutting on the gripe*, a knife and a hook being the only instrument used. The appellation of the *less apparatus* was given to it by Marianus, in order to distinguish it from a method which he described, called the *apparatus major*, from the many instruments employed.

The operation was done in the following way. The rectum was emptied by a clyster, a few hours previously ; and, immediately before cutting, the patient was desired to walk about his chamber, to bring the stone down to the neck of the bladder ; he was then placed in the lap of an assistant, or secured in the manner now practised in the lateral operation. The surgeon then introduced the fore and middle fingers of his left hand, well oiled, into the anus ; while he pressed with the palm of his right hand on the lower part of the abdomen, above the pubes, in order to promote the descent of the stone. With the fingers the calculus was next griped, pushed forwards towards the neck of the bladder, and made to protrude and form a tumour on the left side of the perinæum. The operator then took a scalpel and made

a lunated incision through the skin and cellular substance, directly on the stone near the anus, down to the neck of the bladder, with the horns towards the hip. Then, in the deeper and narrower part of the wound, a second transverse incision was made on the stone into the neck of the bladder itself, till the flowing out of the urine showed that the incision exceeded in some degree the size of the stone. The calculus, being strongly pressed upon with the fingers, next started out of itself, or was extracted with a hook for the purpose.—(*Celsus*, lib. 7. cap. 26. *J. Bell's Principles*, vol. ii. p. 42. *Allan on Lithotomy*, p. 10.)

The objections to cutting on the gripe are, the impossibility of always dividing the same parts; for those which are cut will vary according to the degree of force employed in making the stone project in the perinæum. When little exertion is made, if the incision be begun just behind the scrotum, the urethra may be altogether detached from the prostate; if the stone be much pushed out, the bladder may be entered beyond the prostate, and both the vesiculæ seminales and vasa deferentia inevitably suffer. Lastly, if the parts are just sufficiently protruded, the neck of the bladder will be cut, through the substance of the prostate gland.—(*Allan on Lithotomy*. *Burns*, in *Edinb. Surg. Journal*, No. XIII. *J. Bell*, vol. ii. p. 59.)

The preceding dangers were known to Fabricius Hildanus, who attempted to obviate them by cutting on a staff introduced through the urethra into the bladder. He began his incision in the perinæum, about half an inch on the side of the raphe: and he continued the cut, inclining the knife, as he proceeded, towards the hip. He continued to divide the parts till he reached the staff, after which he enlarged the wound to such an extent as permitted him easily with a hook to extract the stone, which he had previously brought into the neck of the bladder by pressure with the fingers in the rectum.—(*Burns*.) In this way Mr. C. Bell has operated with success.—(*J. Bell*.)

The apparatus minor, as practised by Fabricius, with the aid of a staff, is certainly a very simple operation on children, and some judicious surgeons doubt the propriety of its present neglected state. You cut, says an eminent writer, upon the stone, and make of course with perfect security an incision exactly proportioned to its size. There is no difficult nor dangerous dissection: no gorget nor other dangerous instrument thrust into the bladder, with the risk of its passing between that and the rectum; you are performing expressly the lateral incision of Raw and Cheselden, in the most simple and favourable way. The *prisca simplicitas instrumentorum* seems to have been deserted for the sake of inventing more ingenious and complicated operations.—(*J. Bell*.)

Celsus has delivered one memorable precept in his description of lithotomy, *ut plaga paulo major quàm calculus sit*; and he seems to have known very well that there was more danger in lacerating than cutting the parts.

The simplicity of the apparatus minor, however, formerly emboldened every quack to undertake it; and as this was followed by the evils and blunders unavoidably originating from ignorance, at the same

time that it diminished the emolument of regular practitioners, the operation fell into disrepute.—(See *Heister*.) It was longer practised, however, than all the other methods, having been continued to the commencement of the 16th century ; and it was performed at Bordeaux, Paris, and other places in France, on patients of all ages, by Raoux, even as late as 150 years ago. Frere Jaques occasionally had recourse to it ; and it was successfully executed by Heister.—(Part 2. chap. 140.) A modern author recommends it always to be preferred, on boys under fourteen.—(*Allan*, p. 12.)

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### *Enlargement of the Prostate Gland.*

#### *Symptoms.*

SENSE of weight and bearing down in the perineum ; frequent inclination to make water, with difficulty and pain in voiding it ; great costiveness ; the evacuation of fæces is attended with much pain, and is in general accompanied with a discharge of urine ; micturition and dysuria increase, and at length a total suppression takes place.

#### *Diagnosis.*

The urine and fæces discharged at the same time ; the patient, in making water, is observed to kneel and separate his legs from each other, in order to effect a relaxation of the muscles ; an examination per rectum, when a large irregular tumour will be discovered in the situation of the prostate gland.

#### *Treatment.*

Recourse should be had to all those means which allay irritation in the urinary organs. The internal use of opium, cicuta ; the occasional or constant use of a catheter.—(See *Gravel and Stone*.)



## CHAPTER XXVIII.

### AMPUTATION.

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*"It is an excellent observation, founded on the purest humanity, and justified by the soundest professional principles, that to save one limb is infinitely more honourable to the surgeon, than to have performed numerous amputations, however successful."*

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I INTRODUCE the subject of amputation here, not to give the method of performing it, but to make some remarks upon the propriety or impropriety of it in many diseases.

"From the earliest periods," says Gibson, "the question of the propriety or impropriety of amputation, in certain diseases and injuries, has been agitated with warmth and even acrimony; some contending that the operation was scarcely ever necessary under any circumstances; others, that patients were often suffered to die for the want of it. Unfortunately, these points are almost as unsettled at the present day, as at any former period."—(*Gibson's Surgery.*)

It certainly must be admitted, that the act of performing amputation is proof of the surgeon's ignorance; for, if he possesses skill or knowledge of the healing art, he would be enabled to cure the disease for which he amputates.

"The amputation of a limb," says Pott, "is an operation terrible to bear, horrid to see, and must leave the person on whom it has been performed, in a mutilated and imperfect state."

When we reflect how often this operation is performed, either through the desire of obtaining notoriety, ignorance or other causes, it is enough to produce a strong feeling of indignation in the mind of every feeling person.

In every direction, there are cases in which amputation has been proposed, which have been cured by very simple means, or perhaps the efforts of nature alone; thus showing conclusively, that practitioners in this day labour under a most lamentable error.

A case occurred in New-Jersey, where a man injured his leg, and where a physician decided that it must be amputated; and after it was cured by another physician, he felt so indignant at the first, who wished to deprive him of it unnecessarily, that he could scarcely refrain, when he saw him, from "kicking" him with it.

Let us briefly examine into the reasons given for amputation, and refer to the diseases for which it is performed.

And, first—*Compound Fractures*, particularly of the ankle joint. It has been thought necessary to amputate almost in every case for this accident. A noted surgeon of this city was always in the habit of it. But, to show that it is unnecessary to amputate in such cases, even without the benefit of any reformed system of medicine, I shall quote some remarks and cases, as recorded by Sir Astley Cooper, in a work of his, on dislocations and fractures of the joints.

Speaking of compound dislocations of the ankle, he says, "*is amputation required?*" The first question which arises upon this subject, is the following :

*Is Amputation generally necessary in Compound Dislocations of the Ankle?*

My answer is, certainly not. Thirty years ago, it was the practice to amputate limbs for this accident, and the operation was then thought absolutely necessary for the preservation of life, by some of our best surgeons ; but so many limbs have been saved of late years, indeed I may so say, so great a majority of these cases exist, that such advice would now be considered not only injudicious, but cruel. I shall now proceed to state the cases which have induced me to say that amputation, as a general rule, is improper.

CASE I.

I was, many years since, going into the country with a friend of mine, and we met with a surgeon on our journey, who put this question : "How do you act in compound dislocations of the ankle joint?" I do not recollect the reply, but he proceeded to say, "I have had a case of compound dislocation of the ankle joint under my care, in which I told the patient he must lose his limb. Not approving this advice, his friends sent for another surgeon, who said he thought he could save it ; the patient placed himself under his care, and the man is recovering."

About thirty years ago I received from Mr. Lynn, of Woodbridge, now Dr. Lynn, of Bury, St. Edmunds, the astragalus of a man broken into two pieces, which he had taken from a dislocated ankle joint. His letter is as follows :

CASE II.

Dear Sir :—J. York, aged thirty-two years, being pursued by some bailiffs, jumped from the height of several feet to avoid them. The tibia, and a part of the astragalus protruded at the inner ankle. I immediately returned the parts into their natural situation. Suppuration ensued ; and in five weeks a portion of the astragalus separated, and another piece a week afterwards, which, when joined, formed the ball of that bone. In three months the joint was filled with granulations. It soon afterwards healed, and the man recovered with a good use of the limb.

CASE III.

(Communicated by Dr. Battley.)

A person threw himself from a window and produced a compound dislocation of the ankle joint. The tibia was thrown on the inner side of the foot, and when the finger was passed into the wound, the astragalus was discovered to be shattered in a number of pieces. A neighbouring surgeon was sent for, who, on viewing the case, proposed an immediate amputation, which was not acceded to. Mr.

Cooper and myself were requested to take charge of the case. The loose and unconnected portions of the bone were removed, and the tibia was replaced. The parts were ordered to be kept cool by frequent applications of evaporating lotions. Suppuration continued, but after four or five months, filled up, and the joint healed at the end of nine months, but the ankle was stiff. In two years he could walk without the aid of a stick, and at the end of three or four years was nearly as well as at any former period of his life.

#### CASE IV.

##### *Compound Dislocation of the Tibia, inward.*

Mr. Knowles, a farmer, was thrown from his chaise, against the hinder wheel of a wagon, and dislocated the tibia inward, and fractured both the tibia and fibula. Mr. Richards, who was called, reduced the dislocation, and endeavoured to heal the wound by adhesion. When I saw Mr. Knowles, which was ten days after the accident, the wound wore a favourable aspect. The discharge was abundant, but not in a degree to excite alarm, and all I had to do was to praise the judgment which led to the preservation of the limb. The wound perfectly healed, and the patient walks without the use of a stick.

#### CASE V.

##### *Compound Dislocation of the Tibia outwards.*

Elizabeth Chisnel, received a compound dislocation of the ankle joint outwards. The wound communicated with the joint, which was situated upon the outer part of the leg, and was about four inches in extent, through which the fibula projected two inches. The ligaments connecting the malleolus externus and the astragalus were lacerated. From the inclination of the solc of the foot inwards, the whole surface of the joint was so displaced as to allow two fingers to pass readily across. The tibia was fractured. The parts were returned to their original situation, straps of adhesive plaster applied, and the leg splinted. The parts discharged freely, and in two months the wounds were almost healed. During the progress of the cure, there was not much constitutional disturbance.

#### CASE VI.

##### *Compound Dislocation of the Tibia inward.*

Mr. George Caruthers received a compound dislocation of the ankle joint inwards, with fracture of the tibia, the end of which projected through the integuments of the inner ankle, two or three inches, and the bone was tightly embraced by the skin. A considerable portion of the bone afterwards came away, when the sore immediately healed, and he is now in better health than he was before the accident.

Mr. Somerville relates the following cases. Two patients were received in the Stafford Infirmary, with compound dislocation of the ankle-joint. They were both dislocated inwards, and were both dis-

charged cured ; the one at the end of the fifth, the other not till the end of the seventh week.

## CASE VII.

(Communicated by Dr. Scarr.)

*Compound Dislocation of the Tibia outwards.*

John Plumb, in descending upon a ladder, with a sack of oats upon his shoulders, received a compound dislocation of the tibia outwards. The tibia and fibula had penetrated through the integuments at the outer ankle, and were lying on the outside of the foot. The articular surface of the astragalus had penetrated through the integuments of the inner ankle, the foot nearly reversed, the bottom of the foot being placed where the side of the foot was naturally situated. The bones and integuments were replaced, and cooling lotions applied. Abscesses took place, and after five-and-twenty weeks, the man was convalescent, union of the articular surfaces took place, the wounds healed, and the patient became able to walk. He could not bear to work much on his foot till about twelve months after the accident, from which time he has been constantly labouring.

## CASE VIII.

(Communicated by Dr. Abbott.)

*Compound Dislocation of the Tibia inwards.*

Mr. Robert Cutting, near seventy years of age, corpulent, intemperate and subject to gout from his youth, in a dispute in a state of intoxication, was thrown violently to the ground, and suffered a compound dislocation of the tibia at the ankle-joint. The end of it was forced through the integuments nearly four inches, and the wound was large. In the struggle to stand erect, he rested his weight upon the end of the bone, which was covered with sand and dirt. The cavity of the articulating surface of the joint was filled with blood and sand, the fibula fractured, and the foot completely turned outwards. He was now carried several miles in a cart, and it was five hours before surgical assistance was rendered, in the middle of a cold night. A case so formidable, a large wound, the connecting ligaments lacerated, the surface of the articulating parts long exposed and much injured, led me to conclude that it would be impossible to save the limb, in a constitution so disordered. However, no persuasion could prevail with a mind obstinate and inflexible ; he would not submit to amputation. The surfaces were as carefully and expeditiously as possible made clean with warm water ; the reduction was easily accomplished ; the lacerated parts properly placed, and the edges of the wound brought nearly in apposition, without stitches or adhesive plaster. The limb was laid upon a proper-sized thin board, so as to take the form of the leg, with an opening to receive the outer ankle. Refrigerant lotions were applied, and the system properly attended to. After ten weeks, he was taken from his bed, and the wound was healed. At the end of five months, he was allowed to go upon crutches, and, to please himself, the patient plunged his foot and ankle into the paunch of an ox. In twelve months, he could walk without a stick.



## CASE IX.

(Communicated by Dr. Ransom.)

A female, of a scrofulous habit, fell from a high stool, and caused a compound dislocation of the ankle-joint. The foot was dislocated, the external malleolus was fractured, a lacerated wound extended half round the joint, and laying the cavity of the joint so open as freely to admit the finger, and through it the synovial fluid escaped. The patient recovered.

## CASE X.

(Communicated by Dr. Chandler.)

*Compound Dislocation of the Tibia inwards, and Fracture of the Thigh.*

A bricklayer fell from a height of from between thirty and forty feet, and received a fracture of the thigh, a considerable contusion and laceration of the left ankle-joint, accompanied with a dislocation of the bones inward, the tibia resting upon the inner side of the astragalus. The fibula was broken, and the ligaments lacerated. The question arose on the propriety of amputation, but I ventured to give him a chance of saving the limb. Evaporating lotions were applied, and a cooling course enjoined. Considerable inflammation followed, with the symptoms of gangrene, but they soon disappeared, and the patient gradually improved until the tenth week. In fourteen weeks he was discharged well.

I treated another case of the compound dislocation of the ankle, which was also cured.

*Remarks.*

(Communicated by Dr. Stephen S. Hammick.)

The result of my observations has been, that in cases of compound dislocations of the ankle-joint, there is not only a chance of saving the limb, but that limb being useful.

The following case shows that, under the most unfavourable circumstances, these injuries are not destructive to life in sound constitutions.

I was called, five weeks after the accident, to reduce a dislocation of the ankle, as he had reduced the fracture of the fibula. I saw the patient, but the fractured fibula was so firmly united, that a reduction could not be attempted. The compound dislocation gradually got well, and no bad symptoms arose.

28 PARK STREET, BRISTOL,  
October 20th, 1818.

My Dear Sir:—During the twenty-two years I have been surgeon to the Bristol Infirmary, and I believe during my apprenticeship there, making in all nearly thirty years, it has been our invariable practice to endeavour to save the limb in cases of compound dislocation of the ankle, unless where the chance was annihilated by some concomitant injuries or circumstances: but as a general rule, it was always adhered to, which it would not have been, unless the great majority of cases had done well. We save the limb in private practice almost invariably, unless in very bad cases indeed.

R. SMITH.

Dr. Fisk communicates the following case. A man fell from a ladder, and dislocated the tibia inwards, the bone protruding through the integuments. The man recovered, and has a very useful limb.

## CASE XI.

(Communicated by Dr. Maddox.)

A man was thrown from a horse, and dislocated his ankle. The end of the bone protruded through a large, lacerated and contused wound, and which was broken four inches above the joint; ligaments torn. The patient, in three months, recovered the use of the joint, and from this time experienced no inconvenience from the accident.

Two other cases communicated by the same.

Two cases of dislocation occurred in boys, by falls from horses. In both cases the ankle was broke, and the bones protruded through the flesh. Both recovered.

## CASE XII.

(Communicated by Dr. Ormond.)

A lad, thirteen years old, got his foot entangled in machinery, and caused a bad compound dislocation of the tibia and fibula. The bones protruded four or five inches through the integuments, which were dreadfully lacerated. The wound extended from the ankle nearly to the knee; the bones of the foot were very loose, being torn from their connecting ligaments. It seemed impossible to save the limb, and I was about to amputate, but deferred it. In fifteen weeks after he received the injury, he was able to walk to the factory without crutches.

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I was about to proceed to detail thirty or forty cases more of the same nature, many of which were much worse than any of the preceding, but the limits of this work will not permit. Those who wish further information on this subject, may refer to Sir Astley Cooper's work on Dislocations and Fractures of the Joints.

A volume might be filled with cases of accidents occurring in other parts of the system, where amputation is commonly practised, and which have been cured without it by very mild means. I trust, however, that I have already exhibited proof enough to satisfy every judicious person, that amputation is very rarely or seldom necessary, in the worst cases of compound fracture.

2d. *Mortification*.—I know of no disease in which amputation is rendered more unnecessary, than for mortification; and that according to the very principles now laid down in surgery. It is admitted, that if a limb, in a state of gangrene, be cut off, that the stump will partake of the same character, and thus prove fatal: and therefore it is now recommended never to amputate, until a line of demarcation is formed between the living and the dead part, or, in other words, until the disease is arrested. Then, according to this theory and practice, there is no propriety in removing a limb until the disease gets well or begins to grow better, for which the limb is removed. Any attempt to refute a doctrine so palpably absurd, is rather imposing upon the good sense of the reader. It carries its own refutation on the very face of it.

I know of no complaint that can be more successfully treated, than mortification ; and amputating for it, was it in reality a remedy, would be useless and cruel. I shall, therefore, not dwell upon this subject, but leave it for all sober minded persons to decide how far my statement or views coincide with correct principles of the healing art.

3d. *White Swellings*.—Limbs are now removed for white swellings, but with what propriety, I cannot see. Although it is an obstinate complaint, yet it is a curable one, as I have demonstrated in numerous instances, ever since I commenced the practice of medicine. I have found a sovereign remedy for this most afflicting complaint, for which little else but blisters are recommended, (and which may truly be said to be the *oppropria medicorum*.)

An interesting child, afflicted with this complaint, the other day was led from one of the wards of the hospital into the amputating theatre, writhing in agony in anticipation of the dreadful calamity about to come upon him, while a set (shall I not say) of human butchers were eagerly waiting to display their adroitness in using the amputating knife. His leg was removed for a *common white swelling*, which I should only have required the period of three months effectually to have removed.

Let this case be contrasted with one that recently occurred in a lady of this city, labouring under the same disease. She was told that her leg must be amputated for it ; but by the application of vegetable agents alone, the inflammation, pain and swelling subsided, and she has now the use of it, and can walk as well as ever. And, did the limits of this work permit, a vast number of similar cases might be adduced, to corroborate these principles.

4th. *Necrosis, or Diseased Bone*.—Amputation is recommended and practised for necrosis, or diseases of the bone ; but this arises, as in other cases, in consequence of the ignorance of the surgeon. If he understood his business, or was a skilful physician, he would be able to treat this disease successfully, without ever resorting to amputation. I have never yet seen a case in which I deemed it necessary ; and I do not believe that it is justifiable in any case whatever ; and of this, every practitioner who has had much experience in surgery, must be fully aware. The efforts of nature in expelling dead or diseased bones, is truly astonishing ; and whoever is acquainted with her salutary and powerful efforts, if he possesses only a moderate share of medical skill, would never think of using the knife in affections of this kind.

5th. *Cancer*.—Amputation is now performed for cancerous diseases, particularly for the fungus hæmatodes. But it is well known, and generally acknowledged, that after the patient undergoes an operation for any of these complaints, it returns with greater violence than ever. The cancerous humour, or virus, is so extensive and so interwoven with the adjacent parts, or the vessels concerned in the production of the disease, that only a portion can be removed. So far from even affording relief, it usually aggravates the disease.

A writer remarks, that “ when this disease shows itself only externally, internal organs are mostly at the same time similarly affected.”

The very nature of this complaint is sufficient to prove that the knife is no remedy for it.

6th. *Ulcers*.—Surgeons perform amputation for inveterate ulcers, which certainly evinces great ignorance and cruelty, for it requires but a small share of medical knowledge to cure the worst species of ulcers. But some surgeons, even if they had skill to cure them, would much rather have the name of cutting off a limb, than saving it by any treatment whatever. Again and again we have been called to obstinate ulcers, where amputation has been proposed as the only remedy, and we have succeeded in effecting a cure. I have never yet seen one which has required amputation, nor do I believe that any ever occur which require it.

I have thus briefly treated of the various diseases for which amputation is usually performed, and I think I have shown that *few*, if *any*, call for it. I grant, that if the practitioner have no other resources than such as are laid down in surgical works for the removal of the various diseases for which amputation is performed, that it might be often necessary. But inasmuch as the treatment pointed out in this work is sufficient to cure these diseases, it should be dispensed with, at any rate, with very few exceptions.

Poor must be the resources of that surgeon who has not sufficient skill to prevent the necessity of amputation. How much more creditable would it be to him to save a limb, than ever so handsomely to amputate it.

In concluding this chapter, I shall again quote the remarks inserted in Gibson's Surgery, on *bony tumours*.

In Dr. Gibson, on bony tumours, page 136–7, is the following, to the same import :

“Whoever attends a *European Infirmary*, will be struck with the diversity and multiplicity of operations performed upon the most trivial occasions. Will it be credited, when I say that the illustrious founder of American surgery, during a practice both hospital and private, of thirty years, and more extended than that of any other individual of our country, has hardly ever had occasion to resort to amputation? It may be asked what became of his patients? I answer, they have been cured by general and local means. Doctor, said a surgeon of Pennsylvania hospital, to a distinguished practitioner of a neighbouring city, what would be done in your town with such a leg? We should cut it off, was his reply. We can *cure it here* without, rejoined the other. ‘In a certain London hospital,’ says Dr. Gregory, ‘a patient was under the care of the physicians, on account of a very bad leg, which baffled their skill, and appeared to them almost hopeless; they therefore requested a consultation of the surgeons, to examine the leg and to decide what should be done with it. The surgeons accordingly met, examined it, consulted about it, and resolved *nemine contradicente*, that the leg could not be saved, and ought to be cut off. They cut it off without delay. But, strange to tell, the physicians, at their next visit, on examining the patient, found, to their great astonishment, the supposed hopeless leg as fast to his body as ever it had been.

“‘The puzzle was soon explained. It happened that the man had *two* legs, both of them very bad; one the physicians thought they could save, the other they despaired of. There being but right and wrong, it was not very marvellous that the consultation took the wrong. Both



physicians and surgeons, I believe, were a little disconcerted at that *quid pro quo* ; and as it was thought rather a strong measure to cut off both of the man's legs, they exerted themselves to the utmost and saved the leg which should have been cut off ; so that, after all, the poor man was but one leg out of pocket.

“As I was not an eye-witness of this edifying transaction, it is proper to give some notion of the genealogy of the story, which is very short and simple. I have it from a reverend clergyman, who had it from one of the physicians concerned, and who is now one of the most eminent of his profession in London. I know both the clergyman and the physician intimately ; I know them both to be men of veracity and men of sense ; and I have no doubt the facts were just as I have stated them.’

“These remarks may appear, perhaps, irrelative, but I am satisfied of their importance, and shall be gratified if they tend to check the disposition, so prevalent among surgeons, to use the *knife* ; or contribute, in a single instance, to alleviate pain or remove diseases by milder or more appropriate means.”

Even supposing that amputation ever was required, the practice of doing it immediately should be deprecated. The act of performing the very painful operation of cutting off a limb immediately after a severe injury, is sufficient of itself to produce the most serious consequences, besides depriving the patient of any chance of saving his limb. All the pretexts for immediate amputation, can never convince me of the propriety of such a course.

It has often been the case that an operation has been immediately proposed, and when for some reasons it has been deferred a few hours, such a change has taken place as has induced the surgeon to abandon it and the patient has recovered.

Two conclusions, then, are to be drawn from the preceding remarks. 1st. That the diseases for which amputation is performed may be cured without resorting to it. 2d. Should it become necessary ever to amputate, a dangerous, if not fatal error, is practised, by performing such operation prematurely.

In concluding this chapter, I would now ask—for what disease is amputation necessary ?

## CHAPTER XXIX.

### *Dropsy of the Scrotum and Spermatic Cord—(Hydrocele.)*

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**HYDROCELE** is an accumulation of water within the cavity of the tunica vaginalis of the testis, of the spermatic cord, or in the cellular membrane of the scrotum.

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#### SECTION I.

### *Dropsy of the Scrotum—(Hydrocele.)*

#### *Symptoms.*

An accumulation of a fluid is first perceived to commence at the bottom of the scrotum, which gradually increasing, the latter becomes enlarged and distended; a distinct fluctuation is generally to be distinguished; the tumour acquires a pyramidal shape; there is no pain nor discolouration of the integuments; and, upon viewing the parts near to a strong light, a transparency is observable.

#### *Diagnosis.*

It is distinguished from other diseases by its shape, which is constantly pyramidal, except where the patient has had a hernia, or where the disease has been taken for hernia, and a truss has been worn, when it acquires an oblong shape;—by its transparency; yet this criterion is rendered fallacious when the investing membranes have previously undergone inflammation, in which case they become thickened and impermeable to light;—by the fluctuation of the contained fluid; by the tumour having first commenced at the bottom of the scrotum.

*From Hernia.*—By the tumour not dilating when the patient coughs; by the tumour in the one disease commencing at the top of the scrotum, in the other at the bottom; by the facility of returning the protruded intestine, in reducible hernia, into the abdomen.

*From Disease of the Testicle.*—By the want of discolouration and hardness, and the absence of that irregularity to the touch possessed by scirrhus.

*From Hæmatocoele.*—By the colour and shape of the tumour, and by that disease suddenly coming on, and being usually the consequence of accident.

*From Anasarca of the Scrotum.*—By the one being elastic to the feel, the other œdematous; the one pyramidal, the other irregularly shaped.

#### *Treatment.*

At the commencement of the disease, and when a small quantity of fluid only is collected, attempts may be made to disperse it by internal and external applications. When it occurs in children, which is often the case, it may readily be cured by proper treatment, without ever evacuating the water by the trocar or lancet. It is usually con-

nected with anasarca, or a general dropsical affection; and we must begin the treatment in the same manner as we do for general dropsy, by administering *hydragogues* and *diuretics*.

Let the parts be fomented or steamed, by placing the patient over a suitable-sized vessel, in which is put a strong decoction of bitter herbs; the heat or steam to be retained in the usual manner, by means of a blanket. Immediately after, let the herbs be enclosed in muslin or linen, and applied warm to the scrotum, to be repeated two or three times a day. This treatment should be applied not only to children, but to adults, as in some cases it may remove the disease without further applications. But, when it has become large, it usually requires a different course to effect a radical cure.

The water may first be drawn off in the following manner: Let the patient be seated in a chair, when the practitioner will grasp a portion of the tumour at its anterior and inferior part, between his thumb and finger; then with a lancet make a small puncture or incision, by which the contents of the scrotum will be discharged. Some use a trocar, but there is no necessity for it; a simple puncture is sufficient. As soon as the water has been discharged, a tent must be introduced into the orifice, sufficiently stiff; (and to the largest end there should be a piece of silk thread tied, to keep it from entirely entering the sac,) and another should be introduced in the course of twelve hours, in order to keep the wound from healing, as a radical cure depends in a considerable degree upon this circumstance.

Should there be any difficulty attending it, in consequence of the wound healing too fast, a mild *escharotic* must be applied to each tent, before it is introduced, to enlarge it, or keep it open. As soon as the water has been evacuated, every day afterwards *Castile soap* and water, to which a small quantity of the tincture of *gum myrrh* has been added, must be injected into the scrotum by a syringe, with a long pipe. It should be strong enough to excite a little pain. After this, a plaster of the *black salve* is to be applied, and the dressing secured by a suspensory bandage; and, should any inflammation follow, let a poultice be applied.

The hydrocele may also be cured by introducing a seton into the scrotum, and turning or drawing it a little every day, and using injections as above mentioned.

This complaint, in all stages, is the most easily managed of any in surgery; at least I have found it so, having always cured it without any difficulty. But, at the same time, it is, like other diseases, easily controlled only when it is known how properly to treat it. It may be said of every department of the healing art, that it is *simple* when understood. But it is often extremely difficult to obtain this simple knowledge. It can only be acquired by *honesty, perseverance, experience* and great research, especially when there is so much *rubbish* to clear away.

Sometimes the hydrocele is connected with an indurated state of the testicle, and which Pott called the *hydro-sarcocoele*. After the water has been evacuated, by examining the testicle with a probe, it will be found hard and insensible. The cure consists in keeping the orifice open, and injecting occasionally stimulating liquids, sufficiently strong to excite a slight degree of inflammation.

Some time ago I attended a gentleman in this city, who was first attacked with a collection of water in the scrotum, which continued to increase until the swelling or tumour became enormous. I think it had continued for one or two years. It was not transparent, but still its appearance indicated the existence of more or less water. He had applied to several practitioners, but so formidable had it become, that all except one were afraid to undertake it. This surgeon proposed such a severe operation, that the patient was deterred from having it performed. When I commenced the treatment, I was doubtful what the event might be, but I concluded to undertake it, and hazard the result. I first punctured the tumour in the lower portion of it, about half an inch from the septum, or middle portion. After making a puncture with a lancet, I attempted to introduce a trocar, but the water flowed so freely, that I found it quite unnecessary. After having evacuated thirty or forty ounces of serous fluid, I injected, with a small syringe, a weak solution of corrosive sublimate, which caused some inflammation, but it subsided in a few days. I then introduced a long tent, over which I placed a piece of lint, then a plaster of the black salve. The whole dressings were then secured by a suspensory bandage. In this manner it was dressed once or twice a day, (the injection excepted.) The patient was now very feeble, and confined to his bed; and although there was a great diminution of the tumour, yet, from the solution made use of, or injected into the scrotum, there was considerable pain and inflammation. I next applied a poultice, which soon reduced the inflammation, but still the patient did not recover; and, as the disease had become stationary, and assumed a very obstinate and dangerous character, I requested a surgeon to examine the disease with me. He did so, and, after introducing his probe, and finding a scirrhus state of the testicle, he gave it as his opinion, that castration was necessary to effect a cure. I could not, however, agree with the gentleman, but communicated his opinion to the patient, who was totally unwilling to submit to the operation. I therefore continued my treatment, with very little variation. I applied poultices and discutient ointments, until pus or matter collected, when, after being discharged, the hardness, swelling and inflammation soon subsided, and the man grew better very fast, and in a few weeks entirely recovered.

Pott, speaking of this disease, thus remarks:

“An indurated or scirrhus testicle has, indeed, very frequently, a quantity of fluid lodged in its vaginal coat, which is a circumstance not to be wondered at; the diseased state of the gland being sufficient to account for the non-execution of the absorbent faculty, and, consequently, for the collection of the water. But, although part of this mixed tumour is undoubtedly owing to a fluid, and such fluid as is lodged within the vaginal coat, yet it is a very different disease from the true, simple hydrocele, and ought not to be confounded with it; one of these marks of the latter being the natural, soft, healthy state of the testicle, and the characteristic of the former being its diseased and indurated enlargement.”



“We are, by most of the writers on this subject, advised, in operating for the radical cure of an hydrocele, to regard carefully the state and condition of the testicle; and, if we find it enlarged, hardened, putrid, fungous, or any other way really diseased, to remove it immediately.”

“The testicle is first diseased, and the faculty of equal regular absorption thereby interrupted; by which means a quantity of fluid is accumulated, and that mixed appearance produced, which is not improperly called *hydro-sarcocele*. But in this case, the extravasation of water is really the consequence of the morbid state of the gland; and (being still mere lymph) neither is, nor can be, the cause of it.”

“Those who choose it, may call this a species of hydrocele; and the literal sense of the word will certainly vindicate them, but they will by that means run the risk of confounding together two things extremely unlike to each other, and which require very different treatment: I mean the true, simple hydrocele, in which the testicle is soft and sound, (only perhaps a little more lax, and larger than ordinary,) and the hydro-sarcocele, in which the testicle is not only enlarged, but hardened, and not in a sound or healthy state; the former of these will permit such treatment with perfect safety, but in the other may bring the patient both into a state of pain and hazard.”

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## SECTION II.

### *Hydrocele of the Spermatic Cord*

Is of two kinds: the first is described as an œdematous affection, extending to more or less of the cellular substance round the spermatic vessels, and sometimes named the *diffused hydrocele of the cord*; the second form of the disease is that in which the fluid is collected in a particular cavity or cyst, which has no communication with the cavities of the common cellular substance of the cord. This case is denominated, accordingly, the *encysted hydrocele of the cord*. The cellular substance, situated behind the bag of the peritoneum, surrounds the spermatic vessels, passes with them through the inguinal ring, and accompanies them to their insertion in the testicle.

Hydrocele of the spermatic cord, says Cooper, may be defined as a collection of water, which takes place in the tunica vaginalis, between the testicle and abdominal ring.

“Sometimes the fluid extends above the ring, giving rise to the idea of its being inguinal hernia; but you may judge of the nature of the tumour by its blue and semi-transparent appearance, by its being entirely unattended with pain, and by its not running into the abdomen, like inguinal hernia.”

It is distinguished from *hydrocele of the tunica vaginalis testis*, by being situated above the testicle; which, when the tumour is not large, may be distinctly felt below.

*From Anasarca of the Spermatic Cord.*—By the smoothness, elas-

ticity and fluctuation of the one tumour, and the œdematous feel of the other.

It is often with great difficulty distinguished from hernia.—(See *Hernia*.)

#### *Treatment.*

The treatment for this variety of the complaint must be very similar to that recommended for a collection of water in the scrotum. The water must first be evacuated, after which a little soap and water injected, a tent introduced, and a plaster applied.

The common method is, simply to let out the water, and let the wound heal immediately; the consequence of which is, that the water soon collects again, and the disease is worse than ever, and all for the want of using the precaution which is obviously indicated from the very nature of the complaint.

A German physician in this city requested me to aid him, or accompany him to perform an operation for a hydrocele of the spermatic cord, which had previously been done by another surgeon; but, as he had let the puncture heal, it became necessary again to evacuate the water. The tumour was punctured, and the water drawn off in the usual manner; but, no tent being introduced to keep the orifice open, as a matter of course, it soon closed; and, although I have not heard from the patient since, I have no doubt that it was necessary soon to renew the operation.

I intimated to the surgeon the propriety of keeping it open, but he did not choose to depart from established principles, whether right or wrong. Like Dr. Sangrado, when told by Gil Blas that almost all his patients died under his prescriptions, he replied, "Never mind, Gil Blas, we have written a book, and therefore perish the clergy, perish the nobility, perish the people, but let us stick to its principles."

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### SECTION III.

#### *Scirrhus of the Testicle.*

##### *Symptoms.*

An enlargement is first observed in the body of the testicle, which becomes preternaturally hard, and gradually increases in size. An acute, intermitting, lancinating pain ensues; the colour of the integuments becomes livid; the surface assumes an irregular knotty appearance; and often adhesions take place of the skin, forming indentations which much resemble cicatrices. Ulceration supervenes; the edges of the ulcer become livid, sore, hard and retorted; fungous excrescences sprout forth; and if timely means are not employed to prevent the extension of the disease, the spermatic cord partakes of the affection, becoming hard and knotty. Emaciation and hectic fever ensue.

*Diagnosis.*

*From Hernia Humoralis.*—The one is an acute, the other a chronic disease; the one enlarging gradually, the other suddenly. In the one the pain is intermittent, pungent, lancinating; in the other constant. In hernia humoralis the surface of the testicle is smooth, and of the usual colour of inflammation; in scirrhus it is livid, irregular, or knotty.

*From Hydrocele.*—By the transparency of the tumour in that disease; and other marks already mentioned.—(See *Hydrocele.*)

*Treatment.*

It is recommended to remove the testicle, but this operation, I believe, is never attended with any success. Sir Astley Cooper, when speaking of this disease, thus remarks: "The operation of castration for this disease is, however, extremely unsuccessful, for it rarely happens that the complaint does not return after the removal of the scirrhus testicle.

The same course must be pursued for *scirrhus* of the *testicle*, as for scirrhus of any other part.

## SECTION IV.

*Varicocele and Cirsocele.*

Cirsocele is a varicose distention and enlargement of the spermatic vein; and whether considered on account of the pain which it sometimes occasions, or on account of a wasting of the testicle, which now and then follows, it may truly be called a disease. It is frequently mistaken for a descent of a small portion of omentum. The uneasiness which it occasions is a dull kind of pain in the back, generally relieved by suspension of the scrotum. It has been fancied to resemble a collection of earth-worms; but whoever has an idea of a varicose vessel, will not stand in need of an illustration by comparison. It is most frequently confined to that part of the spermatic process, which is below the opening in the abdominal tendon; and the vessels generally become rather larger as they approach the testis.

In general the testicle is perfectly unconcerned in, and unaffected by, this disease; but it sometimes happens, that it makes its appearance very suddenly, and with acute pain, requiring rest and ease; and sometimes, after such symptoms have been removed, Mr. Pott has seen the testicle so wasted as hardly to be discernible. He has also observed the same effect from the injudicious application of a truss to a true cirsocele; the vessels, by means of the pressure, became enlarged to a prodigious size, but the testicle shrunk to almost nothing.—(*Pott's Works*, vol. ii.)

Morgagni has remarked, that the disease is more frequent in the left than in the right spermatic cord; a circumstance which he refers to the left spermatic vein terminating in the renal.—(*De Sedibus et Caus. Morb.* epist. xliii. art. 34.)

Cirsocele is, more frequently than any other disorder, mistaken for an omental hernia. As Sir Astley Cooper remarks, when large, it dilates upon coughing; and it swells in an erect, and retires in a recumbent posture of the body. There is only one sure method of distinguishing the two complaints: place the patient in a horizontal posture, and empty the swelling by pressure upon the scrotum; then put the fingers firmly upon the upper part of the abdominal ring, and desire the patient to rise: if it is a hernia, the tumour cannot re-appear, as long as the pressure is continued at the ring; but if a cirsocele, the swelling returns with increased size, on account of the return of blood into the abdomen being prevented by the pressure.—(A. Cooper on Inguinal Hernia.)

#### *Treatment.*

In general the disease occasions very little inconvenience, and the patient seldom applies for medical aid; but, sometimes the distention becomes very great, and the patient suffers inconvenience from it; a severe pain in the back and loins. The treatment consists in applying fomentations, refrigerant or cooling washes, occasional purgatives, and a suspensory bandage.

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### SECTION VI.

#### *Hæmatocele*

Is a tumour formed by an extravasation of blood in the tunica vaginalis of the testicle, or of the spermatic cord; in the body of the testicle itself, or in the cellular membrane of the scrotum.

#### *Cause.*

Mechanical injury; puncture; a rupture of vessels after the sudden removal of the water in the operation for hydrocele; a relaxed state of the vessels themselves.

#### *Diagnosis.*

The sudden appearance of the tumour; when arising from external injury, the effect immediately following the cause; the livid discolouration of the scrotum; the swelling increasing from the bottom.

#### *Treatment.*

Upon the first appearance of the tumour, astringents may be employed to effect an absorption of the fluid; should these be unsuccessful, recourse must be had to the same treatment as for hydrocele; after which, should an oozing of blood continue, tonics and astringents may be employed both internally and topically.



## SECTION VI.

*Inflammation of the Testicle.**Symptoms.*

Pain and enlargement of the epididymis of the affected testicle; shooting pains along the course of the spermatic cord. The body of the testicle next becomes affected; it swells, becomes hard and painful; the scrotum becomes much enlarged and inflamed; there is a distressing pain in the loins; the system at length becomes affected with fever, quick, hard pulse, nausea and vomiting.

*Causes.*

Inflammation of the testicle may be induced by any of the common causes of inflammation, but is most frequently produced by irritation of the urethra, by the matter of gonorrhœa; the improper use of injections, or incautious introduction of a bougie. It often follows a suppression of the gonorrhœal discharge from cold: sitting on wet grass is a frequent cause.

Inflammation of the testicle and epididymis do not occur from gonorrhœa alone; but are a frequent result of the introduction of a bougie.

This complaint, from an error of pathology, used to be called *hernia humoralis*, in consequence of a belief that it arose from a fluxion of humours to the testicle.

Inflammation of the testicle generally shows itself from within ten to fourteen days after the gonorrhœal discharge.

The first symptom is a sensation of a drop of urine in the perinæum; at this time, the inflammation is proceeding down the urethra, and, before it reaches the testicle, affects the prostate, veru montanum, vasa deferentia, proceeds up the cord to the abdominal ring, then attacks the epididymis, and finally the testicle itself.

While the inflammation is confined to the epididymis, the patient feels little or no pain; but when it has passed to the body of the testicle, then there will be felt excessive pain, in consequence of the unyielding nature of the tunica albuginea. The scrotum is sometimes reddened, arising from the degree of violence which characterizes the inflammation. The pain does not, generally speaking, correspond to the course of the inflammation just now described.—(Cooper.)

*Treatment.*

The patient should be put upon a spare regimen, should remain in a recumbent posture, with the part suspended by means of the bag-truss, employed for irreducible hernia.

If the inflammatory symptoms run high, subdue it by the ordinary means; by *fomentations, refrigerant washes, poultices, &c.*

The treatment laid down for inflammation in general, must be applied in this disease. Suppuration must be prevented, if possible, by the use of discutient applications.

The testicle must be bathed two or three times a day, with the stramonium ointment, and after a short time, let it be changed for the *discutient ointment*. It should also be fomented or steamed over bitter herbs once a day, and continued as long as there is any pain, swelling, or inflammation. A plaster may also be applied.

Should the disease still progress, and threaten to suppurate, apply the *cicuta poultice*. Simmer the plant in water till it is soft, then stir in a little of the slippery-elm bark, sufficient to make it of a proper consistence. This should be applied to the testicle, and kept on by a proper bandage.

After suppuration has taken place, or an abscess formed, and the matter evacuated, the orifice, or orifices, must be kept open by means of tents.

Injectations must also be used, the same as for any sinous ulcer.

I, in general, use the *alkaline liquid*, made strong enough to excite considerable pain for a few minutes, and alternate it with the use of the mild solution of the sublimate, in proportion of four grains to eight ounces of water; the black plaster, or salve, to be applied as usual.

A *purgative* should be given once or twice a week, and the general health renovated by the exhibition of *alterative medicines*.

In this manner I have cured some of the worst diseases of inflamed and diseased testicles, where other surgeons have been unable to succeed, and where castration has been proposed as the only alternative.

## CHAPTER XXX.

### FELON, OR WHITLOW—(*Paronychia*.)

A **WHITLOW** is an inflammation at the end of one of the fingers or thumb, exceedingly painful, and very much disposed to suppurate. The toes are also sometimes the seat of the disease.

Writers usually divide whitlows into four kinds. In the first or mildest, a vesicle filled with matter commonly arises near the root or side of the nail, after a superficial inflammation of trivial extent. The matter is situated immediately under the cuticle. Sometimes the abscess takes place under the nail, in which case the pain is severe, and not unfrequently shoots upwards as far the external condyle.

The second kind of whitlow is chiefly situated in the cellular substance under the cutis, and for the most part occurs at the very end of the finger. In this case the inflammatory symptoms, especially the pain, are far more violent than in other common inflammations of not greater extent. However, although the pain is thus severe, it does not in general extend far from the part affected. Writers usually im-

pute the violence of the pain, and the considerable degree of inflammation attending the complaint, to the hard and unyielding nature of the skin on the finger. To the same cause they also ascribe the difficulty of perceiving any fluctuation, after matter is formed; and the slowness with which the pus makes its way outwards.

The third kind of whitlow is distinguishable from the others by the following circumstances. With the most excruciating pain, there is little swelling in the affected finger, but a vast deal in the hand, particularly about the wrist, and over the whole fore-arm. The pain extends to the hand, wrist, elbow, and even the shoulder. When suppuration takes place, a fluctuation can never be felt in the finger, though it may often be distinctly perceived in the hand, at the wrist, or even somewhere in the fore-arm. The case is frequently accompanied with considerable fever. The disease is seated in the tendons and their sheaths, and the power of moving the fingers, and even the whole hand, is lost.

Authors describe the fourth kind of whitlow, as arising principally from an inflammation of the periosteum. The case is attended with one peculiarity, which is, that however violent the pain may be, it never extends to the hand and fore-arm, nor is there any external swelling of the affected finger. Suppuration generally follows very soon, the usual consequence of which is a caries, or rather a necrosis of the subjacent finger-bones.

Whitlows commonly begin on the inside of the fingers; but they do occasionally commence on the back of these parts, and even on that of the hand. Though pain about the wrist is usually the effect of inflammation in the finger, Acrel mentions a case in which the disorder was altogether confined to the hand itself.—(*Vorfälle*, b. ii. p. 191.)

### *Treatment.*

It is customary, in treating felons, to make a deep incision even down to the periosteum, but I have found this practice in most cases, to make the complaint worse, as much pain and inflammation follows. Some apply blisters, which also prove injurious, while others recommend a bread and milk poultice, all of which treatment I have found to be useless or injurious.

In treating this complaint successfully, in whatever variety it may present itself, our object should be, if possible, to remove it, by resolution, or without the formation of pus or matter; and if we are not able to accomplish this, to make use of such applications as will favour suppuration.

The patient should be directed to immerse the finger in strong ley, as hot and as long as he can bear it; after which mix the elm-bark with the liquid, and apply it. If this fails to afford relief, the whole hand must be effectually steamed over a decoction of herbs, consisting of *catnip*, *wormwood*, *horehound*, *tansy* and *hops*. A handful of each should be boiled down until the strength is extracted, then a small quantity of soft soap must be added, and then the whole thrown into a small vessel, the hand placed over it, and the steam retained by means of a blanket, or piece of flannel, as directed for several

other diseases. The steaming should be continued fifteen or twenty minutes, or as long as the patient can bear, and if there is not sufficient heat to produce perspiration, let a hot brick or stone be thrown into the decoction. This process should be repeated every time it becomes painful. The same herbs and decoction may be preserved, as they answer the purpose as well as those that are fresh. In almost every case, no matter how severe the sufferings of the patient are from the complaint, this operation alone will mitigate them, and afford the most sudden relief.

I have ordered it when the patient has been in acute distress, but he has delayed putting it into practice, under a supposition that it would afford no benefit, when a continuance of the sufferings has forced him to employ it, and the process has been followed by the happiest effects.

After this has been attended to, the poultice should be still continued, and if it does not afford relief, or if it does not appear to agree with the complaint, then substitute the following :

Take the *Indian turnip*, (*arum triphyllum* ;)

*Blue flag*, (*iris versicolor* ;)

let them be well pounded or bruised ; simmer in water until they are soft ; then add a sufficient quantity of the pulverized slippery-elm bark, to form a poultice of the proper consistence.

Where the disease is deep-seated, and protracted, I have sometimes found it necessary to apply two or three different kinds of poultices.

I have occasionally used equal parts of linseed and slippery-elm, simmered awhile in milk and applied ; but the first kind is, in most cases, sufficient.

After it has been treated in this manner awhile, a small white spot will appear in the centre of the swelling, indicating the formation of matter. When this symptom appears, the exit of the matter may be favoured by slowly and cautiously introducing a large needle or probe, directly through this point or place, from which the matter appears about to issue. By rolling the probe backwards and forwards, or by giving it a drill-like motion, and making a little pressure, and continuing it for some time, it can be introduced even down to the periosteum without exciting much pain ; but if matter or pus has sufficiently formed, it is unnecessary to introduce it so far. If it cannot be accomplished at one operation, it must be repeated. Where there has been any difficulty in making the opening, I have occasionally touched the end of the needle or probe with the *mineral caustic*, but this is very seldom necessary. Even after there is a considerable discharge of matter, it may be proper to introduce the probe, to prevent the orifice from closing. Fungous flesh will often shoot from the opening. This must be removed and kept down by a little of the *vegetable caustic* or *potash*.

Some species of felons are exceedingly painful, and protracted, producing a necrosis or destruction of the bone. I have been called to cases where the whole thumb or finger has been in a state of ulceration, and the bone partially or wholly destroyed, and where the flesh of the patient has wasted away 100 pounds, in a short space of time



from excessive irritation. When such a form of the complaint presents, in addition to the means already prescribed, the *vegetable caustic* must be applied, and the ulcer enlarged as much as possible, to obtain access to the diseased bone; and when the bone is sufficiently loose, it must be removed by a pair of forceps.

When this has been removed, or when inflammatory symptoms subside, simple dressings are sufficient to complete the cure. The ulcer may be dressed with a little lint, and the black or healing salve applied.

When there is any constitutional disturbance, suitable medicine should be given. If the patient is unable to sleep at night, let him take an anodyne.

After the felon has healed up, sometimes the sinews are contracted, impeding the motion of the joint. For this let the part be daily rubbed with a relaxing ointment or oil.

In this manner, I have invariably succeeded in curing the worst and every species of felons, and in all stages of them, and often, when the complaint has been exceedingly aggravated by the common practice, particularly in laying it open.

Perhaps, in certain cases, it might be deemed justifiable to make a small puncture with the lancet to let out the matter, but it ought never to be done until there is certain evidence that matter has formed. I, however, prefer the method which I have laid down, having found it more successful.

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## CHAPTER XXXI.

### HARE-LIP—(*Labia Leporina*.)

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THIS is a deformity which consists in a fissure, or perpendicular division of one or both lips. The term has arisen from the fancied resemblance of the part to the upper lip of a hare. Occasionally the fissure is more or less oblique. In general, it is directly below the septum of the nose; but sometimes it corresponds to one of the nostrils. The two portions of the lip are generally movable, and not adherent to the alveolar process; in less common cases they are closely attached to the fore part of the jaw.

Children are frequently born with this kind of mal-formation, which is called a *natural* hare-lip, while that which is produced by a wound, is named *accidental*. Sometimes the portion of the lip which ought to be united have a considerable interspace between them; while in other instances they are not much apart. The cleft is occasionally double, a little lobe or small portion of the lip being situated between the two fissures.

The fissure commonly affects only the lip itself, and usually the upper one. In many cases, however, it extends along the bones and

soft parts forming the palate, even as far as the uvula ; and sometimes those bones are entirely wanting. In a few instances, the jaw not only is imperfectly ossified in front, so that a cleft presents itself there, but one side of it projects forwards, and is at the same time inclined too much outwards, drawing with it the corresponding part of the palate, and the septum nasi, so that a very unsightly distortion of the nostril and nose is produced.

A hare-lip, in its least degree, occasions considerable deformity ; and when more marked, it frequently hinders infants from sucking, and makes it indispensable to nourish them by other means. When the lower lip alone is affected, which is rare as a mal-formation, the child can neither retain its saliva, nor learn to speak, except with the greatest impediment. The constant escape of the saliva, besides being an annoyance, is found to be detrimental to the health ; for its loss impairs the digestive functions, the patient becomes emaciated, and even death would sometimes ensue, if the incessant discharge of so necessary a fluid in the animal economy were not prevented. Thus, a lady, who was in this state, consulted Tronchin, who immediately saw the cause of her indisposition, and recommended the fissure in the lip to be united ; the operation was done, and the dyspeptic symptoms then ceased. And when the fissure pervades the palate, the patient not only articulates very imperfectly, but cannot masticate nor swallow, except with great difficulty, on account of the food readily getting up into the nose.

An early removal of the deformity must obviously be very desirable.

A rational objection to early operations, is the liability of infants to convulsions after operations, and this has induced many to postpone the cure of the hare-lip till the child is about two years old. This custom is also sanctioned by Sir Astley Cooper, who mentions, in his lectures, several instances, which have either been communicated to him by others, or have occurred in his own practice, where operations for the cure of hare-lips, in very young infants, have had a fatal termination, in consequence of an attack of convulsions or diarrhœa. The period when dentition is completed, or the age of two years, he therefore sets down as the most advantageous for the operation, and if parents urge its being done earlier, he very properly advises the surgeon to let them be duly apprized of the risk, so that in the event of the child being cut off, he may not incur blame for having operated at a disadvantageous period of life.—(See *Lancet*, vol. iii. p. 108.)

#### *Common Treatment.*

The common treatment consists in cutting each side of the cleft, then bringing the edges together and keeping them united by passing pins through the lip, or by stitches. The objections to the pins are, 1st. the irritation and inflammation they occasion ; 2d. the failures which occur from the pins being torn out by the child, or catching in the nurse's clothes. The objections to stitches or sutures, are equally great. 1st. the pain and irritation ; 2d. the extensive scar which is left where they have been inserted, as they soon cut through the lip, and leave an unsightly scar through the whole track.

I saw a case, a few days ago, the child of Mr. Valentine, in Mulberry-street, on which the interrupted suture was used by Dr. M—; and although the fissure united, an extensive cicatrix was left as far as the stitches extended.

### *Reformed Practice.*

In the operation, the grand object is to make as smooth and even a cut as possible, in order that it may more certainly unite by the first intention, and of such a shape that the scar may form only one narrow line. The edges of the fissure should, therefore, be cut off with scissors or a sharp knife. If the knife is used, the best plan is, either to place any flat instrument, such as a piece of horn, wood or pasteboard, underneath one portion of the lip, and then, holding the part stretched and supported on it, to cut away the whole of the callous edge; or else to hold the part with a pair of forceps, the under blade of which is much broader than the upper one: the first serves to support the lip, the other contributes also to this effect, and, at the same time, serves as a sort of ruler for guiding the knife in an accurately straight line. When the forceps are preferred, the surgeon must of course leave on the side of the upper blade just as much of the edge of the fissure as is to be removed, so that it can be cut off with one sweep of the knife. This is to be done on each side of the cleft, observing the rule, to make the new wound in straight lines, because the sides of it can never be made to correspond without this caution. For instance, if the hare-lip had an uneven shape, the incision of the edges must be continued in straight lines till they meet, in the manner here represented:



In short, the two incisions are to be perfectly straight, and are to meet at angle above, in order that the whole track of the wound may be brought together, and united by the first intention.

After the edges of the fissure have been thus cut smooth, they are to be brought evenly together, each part perfectly corresponding, after which the *improved uniting plaster* is to be applied, as directed under the head of incised wounds. The lower plasters must be placed close to the edges of the incised fissure, and the upper ones drawn sufficiently to bring them closely together. Two or three narrow strips of adhesive plaster may be also placed over it. This will keep the edges of the fissure in contact, and they will speedily unite by the first intention, and without ever causing convulsions or any untoward or unpleasant effects. Besides, in pursuing this improved method, the operation may be performed at almost any age, or, at any rate, much earlier than is recommended in the ordinary operation. But the most suitable time to do it is when the child is a year old.

A person who has never seen the application of this improved plaster, cannot form a correct idea of the excellent indications which it fulfils, besides obviating the danger, pain, inconvenience, the inflammation, ulceration and failure consequent on the use of pins or the interrupted suture.

It is necessary to administer an anodyne to the child one hour before the operation; and if the lip adheres to the jaw, to separate it with a lancet. If there is a double hare-lip, it must be treated in the same manner.



## CHAPTER XXXII.

### POLYPUS.

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A **POLYPUS** is a fleshy excrescence, of various density and colour, originating from the lining membrane of a canal, or cavity, as the nose, vagina, rectum, &c.

The nostrils are the most frequent situation of this complaint. It commences as a small pendulous tumour, void of pain, accompanied with watering of the eyes, sneezing, and the usual symptoms of catarrh. The colour of these tumours is generally of a pale red. They commonly commence from the ossa spongiosa; but occasionally from all the parts concerned in forming the cavity of the nostril. They produce, at first, no other effects than have been noticed, but as they enlarge, the defluxion from the eyes increases, sneezing is frequent, and the tone of the voice is much altered.

The weather has a great influence on the patient: in dry weather the tumour appears to diminish, and it increases in damp and cold weather. Augmenting gradually in size, it at length obstructs the passage of air through the nostril, and in this stage produces a very unpleasant nasal tone of the voice. The polypus assumes gradually the shape of the nose, being formed in it as in a mould. It becomes visible at the anterior nostril, and at the fauces behind, where it may be seen situated over the soft palate, and sometimes hanging down behind the uvula. In this state great inconvenience is experienced, the eyes are constantly suffused with tears, from the obstruction to the ductus ad nasum.

In some instances ulceration takes place, and a fetid matter is discharged, attended with great inflammation and severe pain. In some cases, however, it is remarkable that the tumour acquires a great size, and the patient suffers no pain. From the nose being stopped, patients generally sleep with the mouth open, and inconvenience is sustained from the dryness of the mouth and throat. Hearing is often injured, probably from pressure against the eustachian tube. In swallowing, some difficulty is experienced from the weight of the tumour, which presses against the velum pendulum palati. The appearance of the face becomes changed, from one nostril being wider than the other, the root of the nose appears swelled, and violent headaches come on; the bones eventually become carious and ulcerated; a foul fetid sanies, mixed with blood, is discharged; hæmorrhage sometimes ensues, the teeth fall out, and a fungus shoots through the sockets. The symptoms, in some cases, increase, and exhaust the patient's strength; frequent bleedings, and an incessant discharge of matter takes place, and during the last stage of the disease, stupor and coma come on, and eventually death. Such are sometimes the dreadful effects of a disease, at first trifling, and to all appearance of very little consequence.

The causes of this complaint are not well understood. Some have



supposed picking, or violently blowing the nose, to have produced it, but for this there is no foundation.

Several species of nasal polypi are described by authors, one of which is said to be of a malignant nature, disposed to end in cancer. This, however, I believe, is extremely rare ; the most common are a fleshy, red, vascular polypus, and a pale, tough, firm polypus, neither of which is of a cancerous nature.

#### *Treatment.*

I have succeeded in curing this disease, when it has not become too large, by directing the patient to use the following, as a sternutatory or snuff :

Take *Bayberry bark*,  
*Blood-root*,  
*Calomel* ; equal parts.

Pulverize and mix. This must be snuffed up the nose frequently through the day. If the polypus is too large to admit it, it may be introduced by tying a strip of linen to a probe, wetting it, then dipping in the powder, and touching the tumour with it : to be often repeated. Where the tumour is quite large, and this method does not prove effectual, it may be necessary to introduce a pair of forceps, and seize the tumour as far up as possible, and compress so hard as to disorganize it, or by turning the forceps to twist it off, and afterwards apply the powder to prevent a regrowth. I have never had occasion to do this except in one instance, and this was in the last stage of the complaint. Many practitioners are in the habit of introducing a ligature round the polypus, by means of a double canula. But, whether taken out in this manner or by the forceps, it is very apt to appear again, except some escharotic be applied to the source or origin of it. The above powder generally turns the polypus black, when it will either disappear by a discharge, or drop off. The powder must be continued for some time after it is apparently well.

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### CHAPTER XXXIII.

#### *Ranula*

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Is a little inflammatory or indolent tumour, situated under the tongue, by the side of the ranular artery, on either side of the frænum. It is of greater or less size ; sometimes acquiring such magnitude as to impede the motions of the tongue, obstruct the speech, and, in children, who are equally subject to the affection as adults, prevent the action of sucking. Its contents are various : generally a fluid

resembling saliva; sometimes a glairy matter like that found in the cells of swelled joints; and then a fatty or carious substance. Its cause is supposed to be an obstruction of the salivary ducts, arising from either cold, inflammation, calculary concretions, &c. It is attended with little or no pain. In some cases, it long remains in an indolent state; in others, it soon acquires a considerable size, spontaneously bursts, and leaves an ulcer extremely difficult to heal.

#### *Treatment.*

The usual applications to this disease are powerful astringents and escharotic applications. If this should fail, pass a seton through the tumour, which will radically cure it.



### CHAPTER XXXIV.

#### SALT RHEUM, TETTER—(*Herpes. Psoriasis.*)



This is a troublesome, inveterate eruption, appearing on different parts of the body, usually the hands. Very small eruptions or vesicles appear, which break and discharge a thin, ichorous or corrosive fluid, that causes a very great degree of irritation or itching. Afterwards scabs often form upon the part affected, which, though they be rubbed off, or dry away, will after awhile re-appear.

It is attended with more or less inflammation and swelling, and such is the degree of itching sometimes attending it, that the patient is obliged to scratch continually to obtain the least relief. The whole hands, or parts, sometimes become excoriated, stiff and almost immovable. It appears to be located principally underneath the skin, although, from its disappearing in one part, and then appearing in another, it is evident that the disease is located in the vascular system, or the blood. It appears to be occasioned by a retention of morbid humours, which are thrown to the surface, and which the system seems unable entirely to expel.

The disease appears to be very similar to the different species of herpes, as described by some authors. Four kinds are enumerated, as follows:

1. *Herpes Farinosus*, or what may be termed the *dry tetter*, is the most simple of all the species. It appears indiscriminately in different parts of the body, but most commonly on the face, neck, arms and wrists, in pretty broad spots and small pimples. These are generally very itchy, though not otherwise troublesome; and, after continuing a certain time, they at last fall off in the form of a white powder, similar to fine bran, leaving the skin below perfectly sound; and

again returning in the form of a red efflorescence, they fall off, and are renewed as before.

2. *Herpes Pustulosus*. This species appears in the form of pustules, which originally are separate and distinct, but which afterwards run together in clusters. At first, they seemed to contain nothing but a thin watery serum, which afterward turns yellow, and, exuding over the whole surface of the part affected, it at last dries into a thick crust, or scab; when this falls off, the skin below frequently appears entire, with only a slight degree of redness on its surface; but on some occasions, when the matter has probably been more acrid, upon the scab falling off, the skin is found slightly excoriated. Eruptions of this kind appear most frequently on the face, behind the ears, and on other parts of the head; and they occur most commonly in children.

3. *Herpes Miliaris*—the miliary tetter. This breaks out indiscriminately over the whole body; but more frequently about the loins, breast, perinæum, scrotum and inguina, than in other parts. It generally appears in clusters, though sometimes in distinct rings, or circles, of very minute pimples, the resemblance of which to the millet seed has given rise to the denomination of the species. The pimples are at first, though small, perfectly separate, and contain nothing but a clear lymph, which, in the course of this disease, is excreted upon the surface, and there forms into small distinct scales; these, at last, fall off, and leave a considerable degree of inflammation below, and still continues to exude fresh matter, which likewise forms into cakes, and so falls off as before. The itching, in this species of complaint, is always very troublesome; and the matter discharged from the pimples is so tough and viscid, that every thing applied to the part adheres, so as to occasion much trouble and uneasiness on its being removed.

4. *Herpes Exedens*, the eating and corroding tetter, (so called from its destroying or corroding the parts which it attacks,) appears commonly, at first, in the form of several small painful ulcerations, all collected into larger spots, of different sizes and of various figures, with always more or less of an erysipelatous inflammation. These ulcers discharge large quantities of a thin, sharp, serous matter, which sometimes forms into small crusts, that in a short time fall off; but most frequently the discharge is so thin and acrid as to spread along the neighbouring parts, where it soon produces the same kind of sores. Though these ulcers do not, in general proceed farther than the cutis vera, yet sometimes the discharge is so very penetrating and corrosive as to destroy the skin, cellular substance, and, on some occasions, even the muscles themselves. It is this species that should be termed the *depassent* or *phagedenic* ulcer, from the great destruction of parts which it frequently occasions.

#### *Treatment.*

A thousand different remedies are recommended for this complaint, but none can be relied upon as capable of removing it. Hence, it may be considered very difficult entirely to cure; although in many cases which have been exceedingly obstinate, we have successfully

treated. The treatment may be commenced by applying the following wash :

Take *Litharge*, one drachm ;

*Vinegar*, eight ounces ;

Mix, and wash the parts whenever the itching is troublesome. After this has been applied a short time, anoint with the following :

Take *White turpentine*, half a pound ;

*Indian turnip*, (*arum triphyllum*), one ounce ;

*Common plantain leaves*, (*plantago major*), two ounces ;

*Leaves of white lily*, (*lilium candidum*), two ounces ;

*Olive oil*, one ounce ;

*Fresh butter*, half a pound ;

*Beeswax*, two ounces ;

Bruise the leaves and roots, and simmer them in an earthen vessel, in equal parts of spirits and rain water, and closely covered, and, when nearly cold, add two drachms of *yellow ochre* pulverized. This forms a very handsome and efficacious ointment, and which I do not recollect ever to have applied without benefit.

After using this wash and ointment for a reasonable length of time, if it should not cure, with the aid of such internal medicines as I shall hereafter mention, let them be omitted, and let the following wash or tincture be applied :

Take of *Celandine*, (*chelidonium major*), one drachm ;

*Irish whiskey*, or good *spirits*, eight ounces ;

Add the *celandine* to the *spirits*, and digest a few days to extract the strength. Wash often with this tincture. After which, apply the following ointment or salve :

Take *sweet oil*, and add gradually sufficient *red lead*, pulverized, to convert or change it into a salve, or ointment, of a proper consistence to spread, which is effected by placing the mixture over a fire, and simmering it until a decomposition takes place, or until it becomes dark, and acquires a proper consistence for use. Let it be spread thin upon a piece of linen, and applied over the parts affected.

If the complaint is attended with any inflammation, it must be first subdued by a poultice made of the *slippery-elm bark* and fresh milk, which will soon allay it, as well as the itching.

An excellent ointment for the tetter, or salt rheum, is made by mixing half an ounce of the sulphur vivum, (native sulphur) with two ounces of fresh butter, and applying it two or three times a day.

Internally, the patient should take such medicines as are calculated to purify the blood : as the *alterative syrup*, and an *infusion of black alder bark*, *Virginia speedwell*, and *yellow-dock*.

An excellent beer or diet drink, possessing alterative properties, is made by boiling in a suitable quantity of water, the following articles :

Take the root of *sassafras*, (*laurus sassafras*) ;

*Burdock*, (*arctium lappa*) ;

*Black alder*, (*prinos verticillatus*) ;

*Wild cherry-tree*, (*prunus Virginiana*) ;

Of this, let a strong decoction be made, then sweeten with molasses or honey, and when about blood-warm, add a sufficient quantity of yeast to ferment it. The patient should take freely of this beer. The



perspiration should be promoted, and the bowels kept open. The hands should never be immersed in water, as this is sure to exasperate the complaint, and prevent a cure, nor should the patient eat any greasy or sour victuals. This treatment will either cure, or essentially benefit the patient.

Before I commenced the practice of medicine, when I resided in the state of New-Jersey, I became acquainted with an elderly lady who had suffered exceedingly by this complaint; and she had incidentally found a medicine that had entirely eradicated it. Her hands were so swelled, inflamed and excoriated, that she was unable to close them or the fingers, and the medicine cured the complaint. I solicited the family to communicate it to me, for five or six months, before they consented. And it was finally disclosed on conditions of secrecy; but, as I consider the welfare of my fellow men paramount to any promise of this nature, I shall communicate the remedy or preparation used, and leave the reader to judge what merit it possesses. It is a poisonous article, as is elsewhere stated, and I have never used it, except as the last alternative, or when every other means failed:

Take *corrosive sublimate*, one scruple;

*Venice turpentine*, two drachms;

*Fresh butter*, two ounces;

Rub the whole in a mortar until it is well mixed; then apply a small quantity morning and night, after which, let the patient be directed to wear a soft pair of gloves.

While this ointment is used, the following wash is to be applied:

Take *corrosive sublimate*, half a scruple;

Best *French brandy*, eight ounces;

Mix. Wash the hands with this liquid before the ointment is applied.

These are not the original receipts or formulas, as I have found it necessary to vary or alter them. This has cured some very obstinate cases of this disease, although it will sometimes fail.

A case occurs to me now, where a lady applied to me from a great distance to be attended with an herpetic affection, which covered the whole body. Every night large quantities of scales came off, and the complaint was attended with a great deal of pain, itching and distress. I tried various medicines without much benefit; and, at last, I concluded to make use of the sublimate, in the following form:

*Corrosive sublimate*, two drachms;

Best *French brandy*, two quarts;

Mix. I directed the patient to wash the whole body with this, two or three times a day, or as often as the disease became troublesome. Fearing, however, some ill consequences from the application of such a large quantity of this preparation, I directed the patient to commence by first using a little, and gradually increasing it. She found that it benefited her, and, therefore, washed the body as fearlessly as though it had been water. It constantly grew better, until it eradicated every vestige of the complaint; and, notwithstanding exposures, no bad consequences followed the use of it.

In some eruptions, assuming an anomalous character, and particularly those appearing on the face, body, and extremities of infants and

children, as well as adults, I have found the application of the *stramonium ointment* a very valuable remedy.

In some species of this disorder, where other means fail, the *yellow dock*, the *stramonium* and the *discutient ointments*, may be used alternately ; for such a protean type does the *salt rheum*, or *herpes*, sometimes assume, that a variety of medicines become necessary to eradicate every species of it.

The sulphur bath is highly recommended, and I have used it, but I am not prepared to speak decisively of its merits. It is said, however, to have performed cures.

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## CHAPTER XXXV.

### CHILBLAIN.—(*Pernio*.)

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CHILBLAINS are painful, inflammatory swellings, of a deep purple or leaden colour, to which the fingers, toes, heels, and other extreme parts of the body are subject, on being exposed to a severe degree of cold. The pain is not constant, but rather pungent and shooting at particular times, and an insupportable itching attends. In some instances the skin remains entire, but in others it breaks and discharges a thin fluid. When the degree of cold has been very great, or the application long continued, the parts affected are apt to mortify or slough off, leaving a foul, ill-conditioned ulcer behind.

Children and old people are more liable to be troubled with chilblains than those of a middle age ; and such as are of a scrofulous habit are remarked to suffer severely from them.

The best mode of preventing these affections is to avoid, with much care, any exposure to wet or cold ; wherefore, those who are subject to them should be cautious, on the approach of winter, to keep warmly clothed.

#### *Treatment.*

If the parts have recently been frozen, or frost-bitten, the fire must not be approached ; but the cold gradually abstracted. The affected parts may first be immersed in snow, or cold water, which will remove the frost ; after which, let brisk friction be used, and a little camphorated spirits be applied. If there be much pain or inflammation, apply an elm-bark poultice ; after which, a cooling and soothing ointment, and, lastly, the black or healing salve.

## CHAPTER XXXVI

### TIC DOULOUREUX.

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THIS term is used to signify a disorder, the most prominent character of which consists in severe attacks of pain, affecting the nerves of the face; most frequently the filaments of that branch of the fifth pair which comes out of the infra-orbitary foramen: but sometimes the other branches of the fifth pair, and occasionally the numerous filaments of the portio dura of the auditory nerve, which are distributed upon the face. The complaint is not continual, but occurs in violent paroxysms, which vary in duration in different instances.

In the frontal neuralgia, the pain usually begins in the situation of the supra-orbitary foramen, extending at first along the branches and ramifications of the frontal nerve, distributed to the soft parts upon the cranium, and afterward shooting in the direction of the trunk of the nerve towards the bottom of the orbit. In a more advanced stage, the conjunctiva and all the surface of the eye participate in the effects of the disorder, and become affected with chronic inflammation, which is described as a particular species of ophthalmy. At length the pain passes beyond the distribution of the branches of the frontal nerve, and affects all the corresponding side of the face and head. It seems as if it extended itself to the facial, sub-orbitary, maxillary, and even to the temporal and occipital nerves, through the communications naturally existing between the filaments of all those organs of sensation. Each paroxysm produces a spasmodic contraction of the eyelids, and a copious effusion of tears.

The sub-orbitary neuralgia is first felt about the sub-orbitary foramen. The seat is probably in the nerve of this name, and the pain extends to the lower eyelid, the inner canthus of the eye, the muscles about the zygoma, the buccinator, cheek in general, ala of the nose, and the upper lip. At a later period, the pain appears to extend backwards to the trunk of the nerve, and those branches which are given off in its passage through the sub-orbitary canal. Hence, pains are then experienced in the upper teeth, the zygomatic fossa, the palate, tongue, and within the cavity of the nose. As the disorder advances, it may extend, like other neuralgiæ of the face, to all the same side of the head. During the paroxysms, when the disease is fully formed, an abundant salivation usually takes place. In general, the attendant toothach deceives the practitioner, who, in the belief that the pain arises from another cause, uselessly extract several of the teeth.

The tic douloureux of the lower jaw, or maxillary neuralgia, is usually first felt about the situation of the anterior orifice of the canalis mentalis, and it extends to the lower lip, chin, neck, teeth and temple. This form of the complaint is more uncommon than the preceding;

but after it has prevailed some time, is equally remarkable for its intensity.

With respect to the neuralgia of the facial nerve or portio dura of the auditory nerve, it is a case which very soon cannot easily be distinguished from the other species of tic douloureux. The pains at an early period are no longer continued to the passage of the principal branches of this nerve between the parotid gland and ramus of the jaw. The numerous communications of the portio dura with the rest of the nerves of the face seem to facilitate the extension of the disease, so that the agony is soon felt over the whole side of the head. The original source of the disorder can only be detected by attentively considering the progress of the complaint in all its stages.—(See *Delpech, Traité des Maladies réputées Chirurgicales*, t. iii. sect. 7. p. 214, &c.)

Tic douloureux may be known from rheumatism by the paroxysm being excited by the slightest touch, by the shortness of its duration, and the extreme violence of the pain. In acute rheumatism, also, there is fever, with redness, heat, and generally some degree of swelling; and in chronic rheumatism the pain is obtuse, long continued, and often increased at night; none of which symptoms characterize tic douloureux.

It may easily be distinguished from hemicrania by the pain exactly following the course of the branches of the affected nerve.

It is known from the tooth-ach by the comparative shortness of the paroxysm; the quickness of their succession; the intervals of entire ease; the darting of the pain in the track of the particular nerve affected; the more superficial and lancinating kind of pain; and the convulsive twitchings which sometimes accompany the complaint.

The causes of tic douloureux may be said to be in general unknown; but there are a few instances recorded, which appear to be the consequence of external violence, wounds, contusions, &c. It is mentioned in one of the journals, that distant irritations, especially of the splanchnic nerves, often produce this disease, and that Sir H. Hallford has met with cases where the discharge of portions of diseased bone, even from a distant part, has cured the complaint.—(*Med. Chir. Review*, No. 9. vol. iii.) The difficulty of placing implicit reliance on such observations depends on the fact, that disorders frequently exist together in different parts, without having any kind of connexion with each other, and terminate quite as independently.

A modern writer has related a very curious instance of a resembling disease in the arm, where the affection proceeded from the lodgment of a small bit of bullet in the radial nerve.—(*Denmark, in Med. Chir. Trans.* vol. iv. p. 48.) Dr. Parry attributed the pain to increased vascularity or determination of blood (perhaps amounting to inflammation) to the neurilema or vascular membranous envelope of the nerves affected.—(*Elements of Pathology and Therapeutics*.)

Hosack has published among his medical essays some observations on tic douloureux, in which he contends that neuralgia is not a local affection or disease of a particular nerve, and to be removed by the division of such nerve; but a disease dependent upon the whole sys-



tem, and only to be counteracted by remedies addressed to the peculiar state or condition of the constitution.—(Reese.)

### *Treatment.*

This is a difficult disease to cure, but can generally be mitigated, and, after occurring occasionally, will disappear altogether. The treatment consists, 1st, in cleansing the stomach and bowels; 2d, in giving tone to the system, by the exhibition of strengthening medicines; 3d, in administering *anodynes*, such as opium, stramonium, the restorative bitters, also scullcap tea, extract or tincture of henbane, &c., may be given.

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## CHAPTER XXXVII.

### TUMOURS.

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#### *Of Sarcomatous Tumours.*

THESE are vascular tumours, arising from a morbid growth of skin. They generally begin with a small warty projection, which soon becomes pendulous, and sometimes, though not often, enlarges to a considerable size. As the tumour increases, and becomes weighty, it draws the skin from the neighbouring parts, and a pedicle is thus formed. In advanced life, it becomes smooth, livid, and in some instances has degenerated into cancer.

Of this species are *nævi materni*, or *original marks*, which are small excrescences, sometimes hardly arising above the cuticle, at others considerably protuberant; they are firm, fleshy and very vascular, consisting solely of a congeries of vessels.

Smaller tumours of the sarcomatous kind are denominated *warts*: these are usually confined to the hands and fingers, and pudenda, where they are often situated in great number, and follow as a consequence of the venereal disease, though not themselves partaking of the venereal taint.

*Corns* are small tumours of a horny nature, situated on the feet and toes: they consist in a diseased state of the cuticle, produced by pressure.

#### *Diagnosis.*

Sarcomatous tumours are distinguished from all others by the hardness of their texture; by their great vascularity; by the absence of pain and inflammation.

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#### *Of Steatomatous Tumours.*

These consist in a morbid growth of the adipose membrane: their

first appearance is usually a small excrescence, soft and œdematous; this gradually increasing, often attains an enormous size. They are free from pain and inflammation, and discolouration of the cuticle, and occasion inconvenience to the patient only by their bulk; sometimes, however, after they have become extremely large, inflammation and ulceration take place. They are soft to the touch, feeling not unlike the omentum contained within a hernial sac.

### *Diagnosis.*

The characteristic marks are, the softness of their texture; their great bulk; the absence of pain and inflammation.

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### *Of Encysted Tumours.*

The true encysted tumour is a collection of matter contained within a cyst, formed by adhesions in the cellular membrane. From the nature of its contents, it has obtained different appellations, as athromatous, meliceratous, &c. Its seat is the cellular membrane of any part of the body, its size usually that of an egg, and it seldom or never increases to a great bulk. It begins with a distinctly circumscribed swelling, hard to the feel, and unattended by pain. It gradually gets larger and larger, until some slight inflammation comes on, when it becomes in a small degree painful, and a fluctuation is soon afterwards distinctly perceived. As it slowly enlarges, the vessels of the integuments become varicose, and in some instances, though not often, slightly livid.

### *Diagnosis.*

It is distinguished from common abscess by the extreme slowness of its progress to maturation, and by the absence of pain and inflammation.

### *Treatment.*

Tumours may be removed, particularly when they are pendulous, by passing a silk or linen thread around the base, and then fastening it to a short piece of metal or wood, and drawing it daily tight enough to stop the circulation. Tumours of great magnitude may be taken off in this manner, and there is an advantage in removing them in this way, in consequence of no hæmorrhage attending the operation. Besides, the patient has less dread of it than excision by the knife.

I removed a very large sarcomatous or fleshy tumour, of fourteen years' standing, in this manner, from the shoulder of a lady in this city, which was preserved in a jar of turpentine, and exhibited a length of time in Scudder's museum, as a curiosity; and I have found very little difficulty in removing every kind of tumour, without resorting to the knife.

Another method I have successfully practised, which consists in applying the caustic potash over a small portion of the most prominent part of the tumour, until a deep eschar is formed, and afterwards

applying *slippery-elm bark* and *yest*, to promote suppuration. After a few days, sloughing will commence, and the contents of the tumour will be discharged. I once removed a tumour so large from the face of a person, that the boys were in the habit of running after him, to examine it, as a matter of curiosity.

The following is the method of applying the caustic: Take a stick or roll of the *caustic potash*, and enclose it in a piece of paper, all except the end, to prevent injury to the fingers; then, after having wet the most prominent part of the tumour, gently touch or rub it in a circular form, about the size of a twenty-five cent piece, or according to the size of the tumour, to be continued until the skin turns brown or dark, which is usually in about five or ten minutes. As the caustic dissolves, it runs down and excoriates the parts. This should be absorbed by cotton or linen. The pain is severe for a short time only, and no more is experienced until the eschar separates. A poultice of the elm bark and yeast must now be kept on, to favour the process of sloughing, or a detachment of the disorganized parts; which, when done, gives vent to the internal portion or substance of the tumour.

I have taken out a very large tumour, by applying only a few grains of the mineral caustic on the most dependent part of it. The method of applying it is as follows: Make a small roll of any hard plaster, about half the size of a goose-quill; form it into a little ring, of the size you intend to make your opening, and place this upon the tumour; wet the mineral caustic with a few drops of water, and apply it within the ring, and a sufficient quantity to cover it; over this, place a suitable plaster, to retain it; after it has remained on for twelve or twenty-four hours, it will penetrate the tumour to a considerable depth, which will form an eschar, and will penetrate to a considerable depth, and which must be removed by a poultice, made as before directed, when the contents of the tumour will be discharged. In this manner it is removed, without destroying but a very little portion of the skin.

I think it is better to remove tumours in this manner, than it is by the knife; because, 1st. In using the knife, it is necessary to dissect the whole tumour, which is very painful. 2d. There is sometimes danger of hæmorrhage. 3d. The tumour is more apt to recur after excision, than when it is taken out by this method, particularly where the contiguous parts are diseased.

Some kinds of sarcomatous tumours adhere so slightly to the swelling, or the connexion is so slight, that it is only necessary to separate it from the skin, to remove it. All that is required to detach the disease, or the tumour, is to remove the skin, and the little vascular connexions. Hence, this process very easily removes them.

It has occurred to me, that some tumours might be removed with greater facility, by drawing a roll of the *caustic potash* around the bottom or base of the tumour, until an eschar was formed, or until the skin was cut through or destroyed; which, if the tumour was not one solid mass of organized matter, would be separated. Having succeeded so well in removing all kinds of tumours by the method proposed above, I have never attempted this experiment.

I see an account in the Baltimore paper, of one or two large tumours removed merely by puncturing them in one or two places, and then exciting a discharge by injecting a stimulating liquid.

In passing the street some time ago, my curiosity was attracted by a tumour of considerable magnitude, which was situated on the cheek of a negro. I examined it, and made some inquiries respecting it. I found that about one half of the tumour had been removed, which, he informed me, had been effected by rubbing upon it, two or three times a day, the juice of milk-weed, or the milky fluid which issues from the plant; and, from the change that had been produced, I have a favourable opinion of this juice in some kinds of tumours.

There is a species of tumour which, it appears, the knife, caustic, ligature, or any thing else, has not been sufficient always to remove: I mean the bony, callous, or esteo-sarcomatous tumour. Amputation has been performed for this, and various other means tried, but without effect, although I cured one which appeared upon the side of a gentleman, who, in consequence of its inveterate character, came to me a distance of sixty miles, to have it treated. I applied the sassafras oil, and camphor, and cupped it often, then a discutient or sweating plaster, which, after about six months, entirely dispersed it. I have repeatedly seen the patient since, who is perfectly well.

A gentleman from the eastward informs me, that a bony tumour appeared upon some part of an ox belonging to his father, and which he entirely removed, by applying the *phytolacca decandria*, or the common *poke* or *scoke root*. From analogy, we may infer, that this plant, which possesses great discutient properties, would cure tumours of a similar nature, appearing on the human body.

A gentleman called at the office the other day, who had had a wen upon his cheek for eighteen or twenty years, which one of my students removed by the preceding treatment; and another student has removed one since, which had been upon the face for many years, by one application of the caustic potash, which enveloped the whole in an eschar, and removed it in a solid mass.

From the success we have invariably had, in removing different kinds of tumours, in the manner here laid down, I am induced to believe that the knife is very seldom required.

#### *Method of treating an Abdominal Tumour, supposed to contain Hydatids.*

A man, about thirty-four years of age, was recently admitted at the Hotel Dieu, who, for the last eighteen months, had complained of tumour in the situation of the liver, which increased very gradually, but at present occupies the whole of the right hypochondrium. Attentive examination showed, that it is connected with the liver. It is perfectly free from pain, even when pressed upon; has not produced any derangement of the healthy functions of the part, and gives rise to no other inconvenience than that of preventing the man from pursuing his usual avocations. He has had advice from many different medical men, and has tried a great variety of internal and external remedies, to no purpose. It so happens, that M. Recarnier, about a year ago, treated a tumour somewhat similar to this, which proved to



contain hydatids; and, as the means he then employed were perfectly successful, he determined to adopt them on the present occasion. The tumour in the present instance is, however, much larger than the former one; and, although some thought they could perceive that sort of crepitation which hydatids cause when pressed against each other, yet the diagnosis is by no means very clear. However, M. Recarnier proceeded, as in the former case, to puncture the tumour with a very fine trocar, in order to ascertain the nature of its contents. The fluid which flowed out, as had been anticipated, was limpid and colourless, and did not coagulate by heat. After having extracted a small quantity of this fluid, the puncture was carefully closed and healed; and a week after, when the tumour was again distended to its former size, the caustic potash was applied, so as to form an opening into the cavity of the cyst. In the former case, this method answered admirably, as great numbers of hydatids were extracted. A sufficient quantity of water was then injected, to fill the space they had occupied, in order to avoid the introduction of the air; the external wound was dressed in the usual manner, and the patient recovered rapidly. The object in applying caustic, rather than making an opening by incision, is to produce adhesions between the cyst and parietes of the abdomen, so as to form an uninterrupted canal from the tumour to the external parts.—(*Lon. Med. Gaz.*)

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## CHAPTER XXXIX.

### BRONCHOCELE.

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A TUMOUR on the fore part of the neck, formed by an enlargement of the thyroid gland. The progress of the swelling is extremely gradual, and in general the skin long retains its natural appearance. It is at first soft, but as it advances in size, it acquires a great degree of hardness; the skin becomes of a brownish or copper colour, and the veins of the integuments are varicose. The face is subject to frequent flushing; the patient complains of frequent head-achs, and likewise of pains shooting through the body of the tumour. It is often accompanied with hysteric affections.

#### *Causes.*

The inhabitants of Derbyshire, and other mountainous parts of Europe, and those of the Alps and adjacent mountains on the continent, are peculiarly subject to this disorder. Among the latter, it is known by the name of goitre, and its origin is ascribed to the use of snow-water. It is considered a scrofulous affection of the gland.

*Treatment.*

An ointment made of the roots of poke may first be applied, and if this does not discuss it, apply the *discutient ointment*. If this fails, make an issue upon the tumour with the caustic potash, and then poultice it with yest and elm-bark, to promote a discharge.

The juice of milk-weed, from its specific effects in removing wens, might also remove this kind of tumour.

In other respects, let it be treated the same as scrofulous tumours, both internal and external.

Dr. S. Bell, a graduate of our school, has recently cured a difficult case of bronchocele by pursuing this kind of treatment. The *discutient ointment*, united with an ointment made of the poke root, contributed much towards the cure.

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## CHAPTER XL.

### COMMON BOIL—(*Furunculus*.)

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**THIS** disease is so well known that it needs not much description, and although very common, is extremely tedious and painful. A hard, circumscribed, exquisitely painful phlegmonous tumour, generally appearing under the figure of a cone, the base of which is considerably below the surface of the surrounding skin.—Upon the most prominent part of the boil, there is commonly a whitish or livid pustule, exquisitely sensible to the touch, and immediately beneath this is the seat of the abscess. The matter is generally slow in forming, and is seldom found to exist in considerable quantity.

*Treatment.*

When in a state of inflammation let it be poulticed, with a mixture of equal parts of linseed and slippery-elm bark, boiled for a short time in rain water or milk. If the pain be very great, steam it over bitter herbs. After it suppurates and breaks, and when the inflammation has subsided, apply the black or healing salve.

## CHAPTER XLI.

### ENLARGEMENTS OF THE TONSILS.

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ENLARGEMENTS of the tonsils may be of two kinds :

1. The common abscess occurring in cynanche tonsillaris, or inflammatory sore throat.

2. A chronic swelling, generally the consequence of previous inflammation of the gland in a scrofulous habit.

They often become so large as to impede both respiration and deglutition.

#### *Treatment.*

Occasionally give a purgative and also an emetic ; after which, excite perspiration by the ordinary means recommended. If the child is of a suitable age, let it frequently inhale the steam of bitter herbs. When the swelling is very great, bathe it with equal parts of *sassafras* and *olive oils*, to which add a little gum camphor. Afterwards apply over the tonsils equal parts of hops and wormwood, simmered in vinegar. When the inflammation has in a measure subsided, apply the *discutient ointment* on a batt of cotton, to be kept constantly bound on the throat, over the seat of the swelling. The tonsils, if practicable, should be frequently touched with common *ley*, by means of a piece of sponge or muslin, fastened to a probe or a piece of stick. The feet should frequently be bathed, and exposure to wet and cold should be avoided.

It is customary to remove the tonsils when they become enlarged with the knife or ligature, but this is very painful, and not devoid of danger, and if possible should never be resorted to. If these means be persevered in, they will effect a cure without either of these operations.

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## CHAPTER XLII.

### GANGLION.

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A HARD tumour, movable on the tendons, called "*weeping sinew*." Ganglions, upon the tendons, are enclosed in the same cellular membrane which forms their vagina, to facilitate their motion. They

occupy their station also on the annular ligaments and capsulæ mucosæ, through which they pass. These tumours, although indolent, being yet very troublesome by pressing on the tendons, it becomes needful to remove them. This may in common be effected by exciting the absorbents, the best way of doing which is by pressure; for this, when applied to a degree just beyond the point of ease, calls forth their activity to remove, when it is removable, the pressing substance, and that substance is the ganglion. I need scarcely add, that the pressure must be uniform and long continued.

Another method of cure is, to give repeated and hard blows with a hammer; for this, by bruising, disturbs the organic structure of the part, and thereby, according to a beautiful law of the animal economy, excites the absorbents into action for the purpose of conveying it away.

When the ganglion, by neglect, has been suffered to enlarge itself, it may be vain to attempt its resolution in these ways. Nothing then remains but to remove it.

#### *Treatment.*

I have removed this complaint in the following manner: make a small puncture into the tumour with a lancet, which will evacuate a fluid of a transparent appearance; then, with a suitable syringe, inject a stimulating liquid; after which introduce a tent and apply a plaster. Let it be kept open as long as possible.

It may also be removed in the same manner which is recommended for the removal of other tumours. Let it be touched with the *caustic potass* until an eschar is formed, and then employ the *yest* and *elm* poultice to separate it.

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## CHAPTER XLIII.

### DEAFNESS

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Is most commonly owing to a relaxation of the tympanum; accumulation of wax; or paralysis of the auditory nerves.

#### *Treatment.*

Hot stimulating oils applied by means of wool; drop in the ear the balsam of copaiva, then inject soapsuds daily. If this fail, try electricity, and keep up a discharge behind the ear by means of an issue

#### *Extraneous Bodies in the Ear.*

These may often be extracted by means of a small forceps, or by



syringing the ear with tepid water. Should these means be unsuccessful, they may be suffered to remain with impunity if they do not produce pain, as in a short time they will be forced out with the accumulating wax.

Insects may be killed by filling the ear with spirits, or any other fluid, and afterwards be removed by injections of warm water.

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## CHAPTER XLIV.

### AGUE, OR PAIN IN THE FACE AND JAW.

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THE jaws, teeth and face frequently become swollen and painful, proceeding from cold, which is termed by some, ague in the face. It is a very distressing complaint.

#### *Treatment.*

- 1st. Steam the jaws or face over bitter herbs.
- 2d. If the swelling be very great, apply a *ley poultice*.
- 3d. Bathe the parts with *sassafras oil*.
- 4th. Dip a piece of cotton or lint in the *tincture of red pepper*, (*capsicum*,) made warm, and place it between the lip and the jaw. A free discharge of saliva follows, which usually affords immediate relief.

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#### *Toothache.*

Pursue the same course. If it fail to cure, dip a piece of lint in the oil of *cloves*, and press it into the tooth affected. If this fail, apply the oil of *capsicum* in the same manner. And if all these means fail, the nerve may be destroyed, by putting into the decayed tooth, a few drops of *nitric acid*. Great care must be observed to keep it from touching or getting into the mouth.

If the patient is unwilling to have the tooth drawn, and the pain is very great, an *anodyne* may be taken.

By cleaning the teeth, two or three times a week, or even once a week, with a powder composed of equal parts of levigated *charcoal* and *prepared chalk*, it will both preserve and prevent them from aching.

## CHAPTER XLV.

### INVERTED TOE NAIL.

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A disease frequently occurs in the great toe, productive of much inconvenience and distress; an inversion of the nail, generally of the great toe, which grows in upon the flesh, usually in consequence of wearing a tight shoe.

This complaint is attended with severe pain and inflammation; sometimes with ulceration. A fungus arises in many cases, which is extremely sensible, and gives great pain when touched, so that the patient is completely incapacitated from walking. The nail, in many cases, becomes completely imbedded in the flesh, and in others, a thick skin forms over the greater part of it. Distressing spasms occasionally result.

#### *Treatment.*

The foot must be well bathed in very warm ley water at least once a day, and immediately after, the slippery-elm bark poultice must be applied. This will diminish excessive inflammation, and render the patient more comfortable. But, in order to effect a radical cure, it will be necessary, immediately after the foot has been immersed in the ley water for twenty or thirty minutes, to press down as far as possible, without exciting too much pain, pledgets of lint between the nail and the flesh, until they are brought upon a level with the contiguous parts; and after this has been done, if the inflammation has measurably subsided, let a plaster of the black salve be applied immediately over, and a narrow bandage again bound over this, in order to secure the dressings.

I find it best to apply sufficient lint to elevate it above the nail and flesh, that the plaster and bandage may continually produce such a degree of pressure, as to separate the flesh from the nail. Where there is great soreness, the lint may be dipped in a little marshmallow ointment, and if there is much fungus or proud flesh shooting up from the ulcer, apply a few grains of the *vegetable caustic*.

After continuing this treatment a few days, an opening will be made down to the bottom of the projecting nail, except it be unusually deep; and the act of bathing the part will so soften the nail, that the portion which is the source of irritation, can easily be removed, which may be done in different ways.

I have been in the habit of raising the nail with a small pair of tweezers, and then cutting it off with a penknife. Previous to this, however, it is desirable not only to open the parts well, but actually to introduce the lint underneath the point of the nail which penetrates the flesh; and the hour that this is done, the patient feels comparatively well, as the pain and inflammation suddenly subsides. This

not only affords great relief, but enables the practitioner to cut off the nail without creating much pain. Sometimes I cut off a little at every dressing ; at other times, nearly the whole.

The nail must be removed upon a line level with the nail of the opposite foot on the same side, and afterwards the lint and plaster must be kept on until the ulcer has healed. In following this method, I have never yet failed, in a single instance, of effecting a cure ; nor have I ever known a case, after it has been thus cured, again to return.

One lady, I now recollect who applied to me, a distance of forty or fifty miles from this city, who was suffering under a very severe case of inverted toe nail. It was very painful, and she was unable to walk ; but, after pursuing the foregoing treatment a few weeks, she was cured, and has remained well for many years.

Another case occurs to me, which strikingly exemplifies the difference between this practice and that usually pursued. A woman, of this city, had been for many years labouring under this disease, in a most aggravated form. She was in the hospital some length of time, but the surgeons there were unable to cure it. She suffered so much, that she requested them, and subsequently myself and another surgeon, to amputate the leg or the offending members.

It is impossible for me to describe the deplorable state into which this woman was thrown by the complaint. The seat of the disease was in the great toe of each foot, and so deep had the nails penetrated into the flesh, that the pain, swelling, inflammation and ulceration, were excessive, extending to the feet and legs, and which affected the constitution, and rendered her not only a cripple, but completely miserable.

I was called to attend her in connexion with a noted surgeon of this city. He commenced the treatment of one toe, and I commenced the treatment of the other ; and while I pursued the plan already laid down, he passed a pair of forceps underneath one corner of the nail, and suddenly tore the whole of it off, in the act of which the woman fainted, and was thrown into convulsions.

Although the nail was thus entirely removed, so far from curing her, it only aggravated the complaint : whereas, the toe which I treated, and on which no such operation was performed, became perfectly well, and has remained so for years ; and it is now my impression that it was, in the commencement, much worse than the other ; thus clearly evincing the difference between the two modes of treatment.

## CHAPTER XLVI.

### CORNS AND WARTS.

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CORNS are too well known to need any description, and although attended with no danger, they are exceedingly troublesome and painful. They are usually occasioned by wearing shoes that are too tight or small.

#### *Treatment.*

As prevention is better than cure, persons should be careful to wear such shoes as sit easy, and produce no pressure or irritation. But when this precaution has not been attended to, and he becomes afflicted with them, the following treatment will be found very effectual. Bathe the feet, or foot, in warm ley water every day; after which apply the black salve or plaster. I know not that I have ever recommended this without its having the desired effect.

Dr. Seely informs me that he has always cured corns by bathing the part in warm water and paring or shaving the corn with a razor, and then covering it with an alkaline powder called *kali præparatum*. This, he says, entirely destroys them. I presume that the vegetable caustic would be still better, as it is more active.

#### *Warts.*

A very popular remedy for warts, in the country, is the juice of milk-weed and the juice of celandine. If neither of these should remove them, they may be touched with some kind of caustic.

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## CHAPTER XLVII.

### FOREIGN SUBSTANCES IN THE ŒSOPHAGUS AND TRACHEA, OR WINDPIPE.

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SUBSTANCES sometimes become lodged in some portion of the œsophagus or throat, and, by pressing upon the trachea or windpipe, impede respiration, such as fish bones, copper coins, &c.

When I attended the lectures of Dr. Stevens on surgery, I recollect he exhibited a preparation, in which a pair of clasps had destroyed the child by one entering the trachea, and the other the œsophagus, and which might easily have been removed, said the professor, had the situation of it been known at the time. From this circumstance,



we may infer what ought to be done when first called to an accident of this nature. The tongue should be pressed down, and the finger introduced as far as possible, which will often enable a person to extract it, even though it may not be seen. I removed a fish bone from the throat of a person the other day, in this manner, in a few moments.

If a fish bone, or pin, or needle, can be seen in the posterior part of the throat, it may be seized by a pair of tweezers and extracted. An emetic, by the spasmodic affection which it produces, often dislodges any substances of this kind.

If these means fail, a small piece of sponge may be fastened to a piece of whalebone or wire, and, after having immersed it in water, it is to be slowly and cautiously introduced into the throat, in a spiral like manner. Dr. Perkins, one of the graduates of our school, informed me, a few months since, that, by this simple instrument, he removed a fish bone from the œsophagus of a patient.

Some use a probang, and force down the substance ; but there is danger of driving some agents, such as needles, into the integuments, and thus causing serious if not fatal consequences. A lady, in this city, lost her life by this means, a few years ago.

A physician in Canada obtained great celebrity, a few years ago, by a simple but ingenious contrivance, with which he extracted a substance in the œsophagus of a person. It consisted simply in tying a small piece of sponge to a piece of silk, and causing the person to swallow it ; after which, to drink warm tea, and after waiting a short time for the sponge to expand by the absorption of the liquid, the end of the strings was seized and cautiously drawn until the sponge came up, and with it the substance. This may be practised in some cases.

The late Dr. Nathan Smith, of New-Haven, professor of surgery in the medical institution of Yale College, invented a very excellent instrument to extract coins from the œsophagus.

"I have twice been called upon," says he, "to remove coins from the throats of children. In both instances they had descended to near the inferior extremity of the œsophagus, where the passage is a little narrowed, just before entering the stomach. Of course, they were entirely beyond the reach of forceps, or any instrument which might be employed to grasp and thus withdraw them.

"The instrument which the exigencies of the case suggested, and with which I succeeded, was unlike any thing which I have known to be employed for a similar purpose. A very few words will be sufficient to give an idea of it.

"The shaft of the instrument is a rod of whalebone, twenty inches in length, and of the size of a small quill. Half an inch from one extremity there are attached, at acute angles, like the barbs of an arrow, two wings of silver, an inch and a quarter in length, a quarter of an inch wide, and so thin as to be very elastic and flexible. The extremity, which stands off from the instrument, is convoluted so as to render it blunt, and is a little curved inward toward the shaft of the instrument. The two wings are pinned to the shaft of the instrument, and may be continued over its extremity, which should terminate with a bead or obtuse point.

"From the position of the œsophagus between the trachea and

spine, the faces of the coin present forward and back. When the instrument is thrust down the œsophagus, avoiding the glottis, as may be done without difficulty, and presenting the barbs one forward and the other back, it will pass either behind or before the coin, and the barb will spring beyond it, and catch it between itself and the shaft, when it may be very easily withdrawn. The manner in which the shaft is embraced by the œsophagus above, prevents its slipping off laterally. In both the cases alluded to, I accomplished the extraction of the coin without any difficulty, and at the first trial. In the second case, after I had once raised the coin into the mouth, the child instantly swallowed it again, though I had almost seized it with my fingers. It returned to the same place, and I again withdrew it at the first trial.

“The barbs are made so thin, that should they catch in any of the follicles of the œsophagus, they would be everted sooner than rupture the membrane.”

Sometimes substances get into the trachea, or windpipe, and prove serious or fatal. When this happens, an emetic may first be given, and if this fails, and the substance still continues, it may be necessary to make an opening into the trachea. This has sometimes succeeded when other means have failed. A longitudinal or horizontal incision is made just below the thyroid cartilage, which constitutes the prominence in the throat.

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## CHAPTER XLVIII.

### RICKETS—(*Rachitis*.)

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THIS is a peculiar disease, produced by debility of the vascular system, and is commonly called rickets.

Rachitis first manifests itself in disease of the mesenteric glands; the abdomen is increased in size, the head is considerably enlarged, and out of proportion to the rest of the body, so that the disease is often mistaken for hydrocephalus.

The chin is expanded, the sides of the jaws are brought together, and the whole of the features are altered, so that, in general, by merely looking at the face of a patient, you infer from it the nature of the complaint.

In rachitis, an alteration takes place in the form of the spine, which has a double curvature above and below, like the italic *S*; and the other parts of the body are consequently affected by the distortion.

Under these circumstances, nature endeavours still to preserve the

perpendicular line of the body, by producing a second curve as soon as one begins, and the equilibrium is maintained, though there is a considerable variation in the form of the spine. The scapula is also considerably projected: but pressure on the shoulder, with a view of remedying this defect, is a most absurd and unscientific practice; it may give pain, but can do no possible good. The spine, in these cases, has given way in two directions, and the ribs on one side are more curved than on the other. This incurvation of the ribs occasions the alteration in the form on the scapula. The anterior part of the chest is extremely projected; the sternum is sometimes sunk between the cartilages of the ribs, and sometimes advances so as to form what is called a chicken breast.

In addition to the parts already mentioned as influenced by rachitis, the bones of the extremities all undergo a curvature.

When this disease has continued for any length of time, absorption of some of the bones takes place, and nothing but the cartilage remains; such are the miserable changes to which rickety children are subject.

The cause of all these changes is a great deficiency in the powers of the circulation, in consequence of which the bones lose their phosphate of lime, and become spongy at the extremities, and the joints, therefore, are exceedingly enlarged. The ossific matter binds down the cartilages, so as to prevent their expansion, hence arises a diminution of the ossific deposit, which leads the alteration in the form of the bones.

#### *Treatment.*

With respect to the treatment of these cases, you will observe the same general principles which I laid down for scrofula.

The joints or parts affected, may be bathed with equal parts of the *sassafras* and *olive oil*, to which a little *gum camphor* has been added. Afterwards a *strengthening plaster* may be applied.

The *alterative syrup* should be freely given, and continued a length of time. The bowels must be kept regular, and bathing in a tepid salt water bath, will also aid in the cure. I have found that a syrup, made of *comfrey*, *shoke-weed* and *Solomon's sice*, very serviceable in this complaint.

Some time ago, I cured two very bad cases of rickets by pursuing this method. Friction on the parts is also useful.

## CHAPTER XLIX.

### DOW WORM, OR SCALD HEAD—(*Tinea Capitis*.)

THIS disease consists in a chronic inflammation of the skin of the head, productive of a secretion of matter, peculiar in its nature, and capable of propagating the complaint, if applied to the scalp of a healthy subject. At first the eruption is confined, probably, to only a small portion of the head; but by degrees its acrimony is extended to the neighbouring parts, and at length the whole of the scalp is eroded, and beset with a scabby eruption. Dr. Willan has substituted the term *porrigo* for that of *tinea*, as being less objectionable, and considers this genus as consisting of several varieties.

Children are principally affected with it, particularly those of the poor; hence it may arise from uncleanness, from the want of a due proportion of wholesome nutritive food, and possibly from bad nursing. At any rate, these will very much aggravate the disease. In many instances it is propagated by contagion, either by using a comb imbued with the matter from the head of a person labouring under it, or by putting on his hat or cap.

#### *Treatment.*

It is recommended to cut off the hair, and apply a tar plaster over the head, and in some cases it may be beneficial, but I prefer a mode of treatment somewhat different. The head, or the part affected, should be first well washed with soap and water, and then the following ointment applied:

Take *Venice turpentine*, one ounce;  
*Sulphur vivum*, two drachms;  
Fresh *butter or lard*, one ounce;

Stir the whole in a mortar until it is well mixed. Let this be rubbed upon the affected parts three or four times a day.

Give the child cream of tartar and sulphur, mixed in molasses, sufficient to act lightly upon the bowels.

"From some recent experience," says Thatcher, "I am confident that we have a domestic plant, easily procured, which will seldom fail to cure this troublesome and loathsome disease, if properly applied. The plant I refer to is the *kalmia*, or laurel, of which we have two species in our woods and swamps; the broad-leaved laurel, or winter-green, and the narrow-leaved laurel, well known by the name of lamb-kill, from its fatal effects among sheep. The last species is said to be the most active. Take the leaves of laurel or lamb-kill, at any season of the year, boil them till the water is strongly impregnated with their virtues, and then wash the scabby parts about the head twice in a day, until a perfect cure is effected. It will excite considerable smarting, but if it cannot be borne it may be made weaker. Another method of using this remedy is to reduce the dried leaves to a fine powder, and make an ointment by mixing it with hog's



lard, to which some of the powdered root of our swamp hellebore may be added, if desired. This remedy ought, in my opinion, to be preferred, as it is far more neat and cleanly than either the sulphur or tar ointment, and unquestionably of equal efficacy."

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## CHAPTER L.

### RINGWORM, OR IMPETIGO.

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THIS is a cutaneous disease, chiefly occupying the scalp, but sometimes other parts of the body, and arises most frequently from coming much in contact, or using the same comb, cap or hat, with those already affected by it; but in some habits there seems a predisposition to it. It is a disorder more frequently met with in warm climates than in cold ones, is of a very contagious nature, and in inveterate cases is sometimes very difficult to eradicate.

It shows itself in small red pimples, which break out in a circular form, and contain a thin acrid fluid. When the body is heated by exercise these itch intolerably, and upon being scratched, discharge their contents, which, by falling on the neighbouring parts, spread the disease to a considerable degree. The original size of the circle formed by the pimples is usually about that of a sixpenny piece; but in process of time it will become, by neglect, as large as the palm of the hand.

In some cases the disease is so universal that the habit becomes tainted; the skin puts on a leprous appearance, is much disfigured with blotches, and the unhappy patient enjoys not a moment's ease, from the intolerable itching and painful excoriations.

Where the disease is not of an inveterate nature, it may easily be removed, by washing the parts affected with some kind of restringent lotion.

#### *Treatment.*

Wash the ringworm with the following lotion:

Take *litharge*, two drachms;

*Vinegar*, eight ounces;

Mix; apply it three or four times a day. After which anoint it with the *yellow dock ointment*.

Should this fail to remove the complaint, treat it the same as *tetter*, or *salt rheum*.

## CHAPTER LI.

### PSORA, OR THE ITCH.

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THE itch is evidently confined to the skin, and rarely affects the general system, however great its irritation.

It arises most usually from infection, communicated by coming into immediate contact with the body of a person already affected, or by wearing the same clothes, or lying in the same bed-linen that he has done; but it is sometimes produced by unwholesome food, bad air, and a neglect of cleanliness.

The itch shows itself in small pimples about the fingers, wrists, hams and waist, which, after a short time, become so many pustules, and are attended with such an itching as to occasion a constant desire to scratch. When they break, the acrid fluid which they contained falls on the neighbouring parts, and thereby spreads the disease over almost the whole body, if proper remedies are not used to check its progress. Where the pustules are very large, and attended with much inflammation, they are apt to run into boils. The animalculæ which are seen in the pustules are the effect, not the cause of them: as all other stagnating fluids abound with microscopic animals.

#### *Treatment.*

Give internally, the following:

Take *flour of sulphur*, two parts;

*Cream of tartar*, one part;

Mix. Of this powder, to an adult, give a teaspoonful, in molasses, morning and night.

The following ointment to be used externally:

Take *sulphur vivum*, (native sulphur,) half an ounce, pulverized;

*Lard*, two ounces;

Melt the lard, and stir in this powder until it is cold.

Let the parts be bathed two or three times a day with this ointment.

This treatment will cure this loathsome disease in a few days, without the necessity of even changing the clothes, or producing any offensive effluvia.

## CHAPTER LII.

### COLLECTIONS OF MATTER IN THE ANTRUM, OF HIGHMORE.

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#### *Symptoms.*

PAIN extending upwards to the eyes, nose, and ears ; swelling and redness of the integuments over the part ; frequently on a sudden, and especially upon rising from bed, a discharge of matter issues from the nose, which affords a relief to the symptoms, until the cavity becomes again distended.

#### *Treatment.*

Evacuating the matter by means of a puncture made through the alveolus, with a probe, or sharp-pointed instrument ; and after the contents of the cavity have thus been emptied, preventing the sides of the opening from closing, by means of a tent ; and occasionally injecting tincture of myrrh, or some astringent fluid.

Generally after matter has formed, it will find an exit, or it may be evacuated by a probe, without extracting the molar tooth, as some recommend.

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## CHAPTER LIII.

### PSOAS AND LUMBER ABSCESES.

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By these terms are understood chronic collections of matter, which form in the cellular substance of the loins, behind the peritoneum, and descend in the course of the psoas muscle.

If the disease forms on the side of the vertebræ, instead of the fore part, it is termed a lumber abscess, instead of psoas.

The origin of psoas abscess is not, in general, attended with any symptoms of acute pain and inflammation, nor with any febrile disturbance of the constitution.

Previous to the appearance of any other symptom, the patient long feels an unaccountable sense of weakness across the loins, accompanied by an obtuse, yet distressing pain ; but this, so far from leading to a suspicion of the nature of the disease, is usually regarded as rheumatic.

The matter is formed slowly, and imperceptibly, and occasions, at first, no manifest swelling, nor fluctuation.

When the matter has collected, it spreads until it reaches the ori-

gin of the psoas muscle, which passes into ulceration, and forms a bag, surrounded by a complete ring. The abscess proceeds as far as the tendon of the muscle, by Poupart's ligament, and its further progress is restrained by the tendon ; when it passes under Poupart's ligament, between the femoral vein and the symphysis pubis, it has generally attained considerable magnitude.

While the abscess is attended with no external tumour, the discrimination is always difficult.

Upon the first appearance of the tumour beneath Poupart's ligament, it possesses so many of the characteristics of hernia : but the marks, which distinguish it, are the pain in the loins, and the great constitutional derangement which the patient suffers in the progress of the complaint.

The outward swelling, at length occurring, may take place in various situations, and assume different appearances.

The swelling, when in the groin, sometimes insinuates itself beneath the femoral fascia. In other instances, it descends as far as the knee, where it forms a prominent swelling. Sometimes it makes its way downwards into the pelvis, and occasions a swelling in the neighbourhood of the anus. Sometimes it tends towards the loins and sacrum, giving rise to a swelling exactly in the place where abscesses often make their appearance, in the disease of the hip-joint. In a few instances, the matter causes a swelling in the vicinity of the vertebræ : and, less frequently still, it makes its way through the abdominal muscles, and produces a tumour at some part of the abdomen.

#### *Causes.*

The causes of a psoas abscess are frequently involved in great obscurity.

It is supposed, sometimes, to arise from injury done to the back and loins, by severe twists, blows, &c. : at other times, to proceed from sudden exposure to cold after severe exercise, particularly in scrofulous habits.

#### *Treatment.*

If there be inflammation and pain, steam the part, and afterwards apply the slippery-elm poultice. Continue this treatment until the abscess breaks ; and after the matter is evacuated, let it be kept open and the discharge of matter facilitated. After a few days, inject in Castile soap and water, and subsequently liquids more stimulating, such as weak ley, tincture of gum myrrh, &c. They promote the adhesive process in the interior of the abscess, glue its sides together, promote a healthy secretion and the healing process. The black salve may be applied to the ulcer.

There being usually much constitutional disturbance, particularly after it suppurates, such as debility, loss of appetite, &c. it will be necessary to give such medicines as will counteract these symptoms.



## CHAPTER LIV.

### SPRAINS.

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A **SPRAIN** is an injury occurring to the ligaments or tendons surrounding a joint, which are either forcibly stretched or lacerated. It usually happens from the sudden extension of the joint in a direction which the muscles are unprepared for; in the same manner as when a dislocation is produced, only that the violence is not sufficient to occasion a displacement of the bones.

The most common situations of these accidents are, either at the wrist or ankle, arising from sudden falls, by which the joints are unexpectedly and forcibly bent.

These injuries are attended with considerable pain at the time of the accident, and the part soon becomes swollen and tender; the former symptom arises from the effusion of blood in the first instance, out of the lacerated blood-vessels, and becomes subsequently much increased from inflammation; the tenderness and pain are generally in proportion to the tumefaction.

At first the surface of the skin presents its natural appearance, but after a short time, as the effused blood coagulates, it becomes much discoloured.

When inflammation has been set up, and given rise to the effusion of fibrin, a sensation of crepitus is felt on examining the injured part.

This might, by an ignorant surgeon, be mistaken for the crepitus of fractured bone; but it never gives that distinct feel which occurs from the rubbing of one portion of broken bone upon another.

Immediately after the receipt of the injury, the ordinary motions of the joints can be readily performed.

However, as the swelling takes place, these motions become much impeded, and ultimately cannot be performed without producing acute pain, and increasing the mischief.

#### *Treatment.*

The best application to a recent sprain, is *wormwood* and *hops* simmered in vinegar, to be often renewed. If the inflammation is very great, let a poultice be applied. After the irritation, swelling, &c., has subsided, apply a strengthening plaster sufficiently large to cover the sprain. Camphorated spirits is sometimes serviceable, and opodeldoc, which consists of alcohol, soap and camphor. Where sprains are obstinate and protracted, I have applied our green or rheumatic oil, with excellent effect. It is made as follows:

Take oil of wormwood,  
Oil of sassafras,  
Oil of hemlock,  
Oil of red cedar,

Oil or spirits of turpentine,  
Olive oil,  
Gum camphor,

Equal parts. Mix, and bathe the sprain two or three times a day.

Some have recommended cold water, to be poured from a height upon a sprain, and in some cases this may have proved serviceable; but injury sometimes follows the practice, from the sedative effect of the cold. After the above has been used, apply a *strengthening plaster*.

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## CHAPTER LV.

### BURNS AND SCALDS.

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BURNS are usually divided into three kinds: 1st. Into such as produce an inflammation of the cutaneous texture, but an inflammation which, if it be not improperly treated, almost always manifests a tendency to resolution. 2d. Into those which occasion the separation of the cuticle, and produce suppuration on the surface of the skin. 3d. Into others in which the vitality and organization of a greater or less portion of the skin are either immediately or subsequently destroyed, and a soft slough or hard eschar produced.—(See *Thomson on Inflammation*, p. 585, 586.)

Suppuration is not always an unavoidable consequence of the vesications in burns; but it is a common and a troublesome one. “In severe cases, it may take place by the second or third day; often not till a later period. It often occurs without any appearance of ulceration; continues for a longer or shorter time, and is at last stopped by the formation of new skin. In other instances, small ulcerations appear on the surface or edges of the burn. These, spreading, form extensive sores, which are, in general, long in healing, even where the granulations which form upon them have a healthy appearance.—(*Op. cit.* p. 595.)

Burns present different appearances, according to the degree of violence with which the causes producing them have operated, and according to the kind of cause of which they are the effect. Burns which only irritate the surface of the skin, are essentially different from those which destroy it; and these latter have a very different aspect from what others present which have attacked parts more deeply situated, such as the muscles, tendons, ligaments, &c. Scalds, which are the effect of heated fluids, do not exactly resemble burns, occasioned by the direct contact of very hot metallic bodies, or some combustible substance on fire. As fluids are not capable of acquiring so high a temperature as many solids, scalds are generally less violent than burns in the injury which they pro-

duce ; but, in consequence of liquids often flowing about with great rapidity, and being suddenly thrown in large quantities over the patient, scalds are frequently dangerous on account of their extent. It is worthy of remark, that the danger of the effects of fire is not less proportioned to the size, than the degree and depth of the injury. A burn that is so violent as to kill parts at once, may not be in the least dangerous, if not extensive ; while a scald, which perhaps only raises the cuticle, may prove fatal, if very large. The degree of danger, however, is to be rated from a consideration both of the size and violence of the injury. The worst burns which occur in practice, arise from explosions of gunpowder or inflammable gases, from persons' dresses catching fire, and from the boiling over of hot fluids in laboratories, manufactories, &c.

Burns which only destroy and irritate the skin, are very similar to the effects produced by cantharides and rubefacients. The irritation which such injuries excite, increases the action of the arteries of the part affected, and they effuse a fluid under the cuticle, which becomes elevated and detached. Hence, the skin becomes covered with vesicles or bladders, which are more or less numerous and large, according to the manner in which the cause has operated. But, when the skin or subjacent parts are destroyed, no vesicles make their appearance. In this circumstance, a black eschar is seen ; and, when the dead parts are detached, there remains a sore more or less deep, according to the depth to which the destructive effects of the fire have extended.

The parts may either be killed at the moment of the injury, by the immediate effect of the fire, or they may first inflame, and then mortify.

In all cases of burns, the quantity of injury depends on the degree of heat in the burning substance ; on the duration and extent of its application, and on the sensibility of the burnt part.

When a large surface is burnt, mortification sometimes makes its appearance with great violence, and very quickly after the accident ; but in general, the symptom most to be dreaded in such cases is inflammation. The pain and irritation often run to such a pitch that, notwithstanding every means, there is sometimes trouble in keeping down the inflammation. When the burnt surface is very large, the effects of the inflammation are not confined to the part which was first injured, but even cause a great deal of fever ; and, in certain cases, a comatose state, which may end in death.

It has been observed, that persons who die of severe burns, seem to experience a remarkable difficulty of breathing, and oppression of the lungs. These organs and the skin are both concerned in separating a large quantity of water from the circulation ; and their participating in this function may perhaps afford a reason for respiration being often much affected, when a large surface of skin is burnt. However, the kidneys perform the same office, and they are not particularly affected in burnt patients ; so that the asthmatic symptoms frequently noticed in cases of burns, are probably owing to a sympathy between the lungs and skin, or else to causes not at present understood.

According to Dupuytren, extensive and deep burns always bring on inflammation of the mucous membrane of the alimentary canal: a circumstance said to explain those curious instances of death which so often occur when the ulcers are on the point of healing.—(See *Médecine Opératoire, par Sabatier, edit. de MM. Sanson et Beguin.*)

#### Common Treatment.

Perhaps there is no complaint for which so many applications are made use of, as for burns. Some physicians use heating or stimulating, while others use cooling or refrigerant agents. Some apply spirits of turpentine; some cotton; some spirits, &c.; some bleed, &c. Each kind of practice has its advocates, and there appears to be no established rules or uniformity among practitioners. Burns often get well under any and all applications; and whatever is applied at the time, obtains the credit of the cure; notwithstanding which, the greatest benefit is derived from proper applications.

#### Reformed Practice.

I am in the habit of applying to burns and scalds, when first called to treat them, an ointment made of the *stramonium*, which, I find, is very soothing and cooling. When the skin is entirely denuded, the *marshmallow ointment* is preferable; both of which kinds, however, are very beneficial. After this has been applied, make use of a poultice of the elm-bark and milk. When it has been spread upon linen or muslin, let it be covered with olive or sweet oil. The poultice should not be suffered to get dry, but should be often changed. After the pain and inflammation have been removed, apply the black plaster or salve; sometimes it is necessary previously to apply a little lint. When the burn degenerates into an ulcer, and becomes difficult to heal, in consequence of fungous flesh, it must be touched with mild *escharotics*, the same as any common sore.

*Ferris' black plaster*, combined with a very small portion of *white vitriol*, is very effectual. When sympathetic fever succeeds, physic should be administered.

Sometimes hot water or liquids are taken into the mouth, or swallowed. When this happens, let it be gargled with borax water, and let a mucilage of slippery-elm bark be freely drank, and give the patient occasionally a portion of *olive oil*.

For very slight burns, the black salve alone is sufficient to remove the pain and inflammation.

This simple treatment I have found strikingly successful in all kinds of burns and scalds, and in the worst stages of them. The elm poultice, in the course of a few hours, completely changes the appearance of the burn. It removes the inflammation, and from a state of extreme redness, or high colour, changes the parts to perfect whiteness. At the same time, the pain and swelling speedily subside.

All other applications will bear no comparison with this mode of treatment. On one occasion, a child fell backwards into a large kettle of boiling water, and not only burnt itself severely, but actually roasted or disorganized the parts from the back nearly to the feet. A poultice



tice of slippery-elm bark and olive oil alone, in a short space of time, removed the inflammation and acute sufferings of the patient, and the child recovered, which, to all acquainted with the accident, seemed almost incredible. The deep and extensive scars left are frightful. The practice is equally successful in all cases of the kind.

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## CHAPTER LVI.

**SUSPENDED ANIMATION, BY HANGING, DROWNING, SUFFOCATION, OR EXPOSURE TO INTENSE COLD.**

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WHERE the vital principle is supposed to be only suspended, not wholly destroyed, by strangulation resorted to under a fit of despondency, it will be proper to adopt the same means for re-animating the person as are pointed out for the recovery of those who are drowned.

The vital principle is not unfrequently suspended by the deleterious fumes arising from fermenting liquors; from charcoal, coke, &c., in a state of combustion; from metals in a state of fusion, particularly arsenic and mercury; as also very often from respiring the foul air of wells, privies, caverns and mines.

In such cases the following appearances present themselves: the head, face and neck are swollen, the eyes protuberate, the tongue hangs out at one side of the mouth, the jaws are firmly closed, the face is of a livid colour and the lips of a deep blue; the belly is distended and prominent, the person is insensible to any pain, and appears in a profound sleep.

The first sensations he experiences on inhaling air vitiated with noxious fumes are, giddiness, headach, stupor, faintings, inactivity, numbness, and occasionally convulsions.

As soon as possible after a person has been discovered to have been suffocated by any kind of noxious fumes, he should be freely exposed to pure, fresh and cool air, being supported at the same time in a leaning posture. Volatile salts, or other stimulating substances, are then to be applied to the nose, the face be sprinkled with vinegar, and the pit of the stomach with cold water. The legs may likewise be put into a warm bath. Possibly a sudden immersion of the whole body in cold water might be of service, as it is well known that the recovery of the dogs, which are made the subjects of experiment in the Grotto del Cani, is effected by plunging them immediately into a neighbouring lake.

After each application of the vinegar and cold water, every part of the body should be well rubbed with flannels, the temples and insides of the nostrils be stimulated by volatile spirits, and heated bricks, or

bottles filled with warm water, be applied to the soles of the feet, then leaving the person for a few minutes in an undisturbed state. In addition to these means, it may be advisable to administer an active clyster, and if this does not produce a good effect, one consisting of water, mixed with a fourth part of vinegar, may be tried.

To restore the circulation of the blood, due warmth to the body, and respiration, the same means may be used as have been recommended in the case of suspended animation by drowning.

On a return of life, (usually marked by a foaming at the mouth and shivering of the whole body, especially after affusions of cold water,) a little lemonade, or water acidulated with vinegar, should be given to the patient as soon as he is capable of swallowing. If there is an inclination to vomit, it may be encouraged by stimulating the throat with a feather dipped in oil, continuing gentle friction to different parts of the body at intervals.

Should all these means, however, fail in restoring animation, it then will be advisable to employ electricity or galvanism, repeated shocks being passed through the chest. The body should not be abandoned or deserted until after a considerable lapse of time, and a due perseverance in all the means which have been specified as the best calculated to re-animate it; for persons have been known to recover after lying in a state of insensibility a day or two.

In places where a lighted candle will not burn, but becomes extinguished, animal life cannot be supported; and, therefore, in all cases where wells, cist-pools, or deep vaults, are to be opened, a large candle, lighted, ought to be let down very slowly to the bottom before any person attempts to descend. If the candle is extinguished, or even if the flame is materially affected, the well is unsafe to venture in; but if it burns clear and brilliant, there is no danger. If the candle is extinguished, means must be adopted to remove the noxious air before any one descends. To effect this, the following modes will answer: 1st. Let the leather pipe of an engine be introduced to the bottom of the well, if empty, or the surface of the water, and affix a blacksmith's bellows to the other end, when, by well working this, the foul air may be expelled. 2dly. Carbonic acid gas may be bailed out with a bucket made of coarse cloth, like a bag, with a round piece of board, nearly the diameter of the well, at the bottom; let the bucket, thus made, down upon the water, so that the bottom may rest upon it, and let the bag fall upon the bottom; then draw it up, when it will be filled with foul air, which may be brought to the surface, and emptied by turning out and shaking the bag. 3dly. Let down about a bushel of quick lime, dipping it into the water occasionally to slake it; or if there be no water in the well, throw down some for the purpose.

Either of these methods ought to be persevered in till a candle will burn with ease; and even then, in no case ought any person to descend without a strong rope securely fastened round his waist; and he should be attentively watched, so as to be drawn up immediately, if necessary.

The fire-damp, or carburetted hydrogen gas, which is formed in considerable quantities at the bottom of coal-pits, is frequently the cause of the death of many of the miners, by an unexpected explosion in

consequence of the flame of a candle or lantern being brought near. A very effectual apparatus, for preventing such accidents, by consuming the gas, has been invented by Sir Humphry Davy, which promises to be of the highest utility, and insure the safety of all persons who descend into collieries, and that will avail themselves thereof.

Life is sometimes suspended, and now and then wholly destroyed, by an exposure to a severe degree of cold for any length of time. The person thus situated finds himself become very drowsy and much disposed to sleep, in which if he indulges he will be exposed to imminent danger. It therefore will be highly incumbent on him to rouse himself as much as possible, and keep in action. When he fails in this, his companions, if he has any, should well shake him, or even drag him about by force, until the drowsiness ceases.

It is, however, to be suspected that most of the travellers who perish among snow fall martyrs to their drinking intemperately of spirituous liquors: fool-hardy, under the false courage excited by dram drinking, they sally out in the dark to explore their way, and soon lose the road from the change of objects which falling snow occasions. The effects of the dram, in this situation of distress, accelerate death by assisting to bring on drowsiness or sleep, which is almost irresistible; he lays himself down, and in all probability never rises again, or should he be so fortunate to escape with his life, his extremities will be frost-bitten.

The treatment to be adopted in cases of universal torpor and insensibility from an exposure to severe cold, must be as follows: The person to whom such an occurrence has taken place, should be conveyed with all possible speed to a convenient place or house, where the necessary assistance can be given. If the body is found naked, it should be quickly covered with a blanket, leaving the head and face bare. If there is snow on the ground, the body may at first be rubbed gently from the stomach to the extremities with it. Very shortly afterwards, frictions are to be made with cloths steeped in cold water, the temperature of which is to be gradually increased, so as to heat the body by slow degrees. Some of the water may at the same time be sprinkled in the face, and the nostrils and temples be irritated with volatile spirits, such as the solution of ammonia or liquor of hartshorn.

As soon as any degree of heat is restored to the body, and the limbs become somewhat flexible, the person should be placed in a dry but not warm bed, and then be well rubbed with flannels or a soft brush; his lungs should also be inflated in the manner advised in cases of drowning, and an irritating clyster, consisting of near a pint of water, with the addition of a middle sized spoonful of volatile liquor of hartshorn, or of a little mustard, rum, brandy or gin, be administered from time to time.

If the power of swallowing is restored, we should give the person some gently stimulating and warm drink, such as a little thin broth with some brandy in it, or water with some wine and spice, administering these by a spoonful at a time, repeating the dose frequently. When the power of swallowing does not soon return, it would seem advisable to introduce the liquor into the stomach by means of an elastic gum catheter inserted into the gullet through the mouth. The



liquor may be injected through this into the stomach, either by means of a common syringe, or that of an elastic gum bottle, having a small pipe affixed to it. The other means recommended in case of suspended animation by drowning, are also to be adopted and persevered in for a proper length of time.—(Thomas.)

*Drowning.*—When animation has been suspended, by drowning or immersion under water, many of the same means recommended are here proper. The body must be taken to a suitable place, the wet clothes taken off, and immediately dried by rubbing with warm flannels. The face is to be turned somewhat downwards, to give exit to any water which may have been introduced into the lungs; but it should not be rolled over a barrel, or roughly handled, as is sometimes practised. An injection may be given, the feet bathed in warm water, and constant friction kept up for a long time. Bricks and stones may be heated and covered with cloths, wet with vinegar, and applied to the feet, legs and sides; and the windows should be open to admit fresh air. The lungs may also be inflated by blowing into them by the mouth, or by means of a pair of bellows, while an assistant gently presses the breast, up and down, in imitation of natural breathing or respiration. When signs of life appear, and the person can swallow, a little lavender compound and spirits of hartshorn may be given.

The means to be used for the recovery of persons suddenly deprived of life, are nearly the same in all cases: from lightning, poisonous gases, &c.

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## CHAPTER LVII.

### HYDROPHOBIA, OR CANINE MADNESS.

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#### *Cause.*

In the human species, it is always the result of a specific virus or contagion, derived from the bite of an animal labouring under the disease. The poison appears to be exclusively attached to the saliva, by the fact of the disease being produced by wounds inflicted with the teeth of a rabid animal. It may be communicated by bringing the contagious virus in contact with a wounded surface. The bite of a rabid animal is not always followed by hydrophobia. When the person is bitten through clothes, particularly woollens, the virus is sometimes wiped from the teeth before they enter the skin: from this cause, we sometimes find only one or two, out of a number bitten by the same animal, become rabid.

#### *Symptoms.*

At some uncertain period after the bite, a painful tension, redness and heat attack the part bitten, and at the same time darting pains and spasms arise in it; the patient is seized with languor, lassitude,



anxiety, frequent sighing and love of solitude, twitching of the tendons, and horrible dreams torment him. These symptoms continue for some time, and then become worse; a great aversion to, and dread of any kind of liquid, supervenes, inasmuch as the sight of it causes spasms in the throat; a frothy saliva is frequently ejected, and during the paroxysms a desire of biting attends; respiration hurried, and gasping convulsions, and death.

#### *Treatment.*

The wound or bite should be cupped as soon as possible; after which, apply the caustic potash, until an eschar is formed; then apply yeast poultice, and keep up a discharge as long as possible. The patient should now take a strong infusion or decoction of scullcap through the day; mandrake physic once a week. If this does not prevent the disease, and should symptoms of hydrophobia appear, lobelia emetics must be given every other day. Perspiration must be promoted by the steam or vapour bath.

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## CHAPTER LVIII.

### POISONS.

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THERE are various kinds of poisons, which it becomes the province of the practitioner to treat; such as animal, vegetable, mineral and aerial, as well as certain salts, which do not belong to either class.

Since accidents occur so frequently from the agency of some of these articles, it is very important that the subject should be well understood; that we learn how to discriminate between the different kinds of poisons, in order expeditiously and successfully to afford proper antidotes.

#### *1st. Mineral Poisons.*

Mineral poisons are chiefly arsenic, mercury, nitrate of silver, antimony, lead, &c.

#### *Lead.*

When lead has been introduced into the stomach, tremors, colic, palsy, convulsions, &c. take place. An over-dose of antimony also proves fatal, producing violent vomiting, languor and almost imperceptible pulse, coldness of the extremities, insensibility, and not unfrequently convulsions. Arsenic produces a pricking and burning sensation in the stomach, sudden and excruciating pains in the bowels, severe vomiting, the mouth and tongue will become rough and parched, great thirst, restlessness and anxiety. If a great dose has

been taken, and it has not been evacuated, it will cause an inflammation of the stomach and intestines. Corrosive sublimate (the strongest preparation of mercury) produces about the same effect as arsenic, sickness, severe griping pain in the stomach and bowels, excessive vomiting and purging of frothy mucus, sometimes mixed with blood, distention of the belly, suppression of urine, coppery taste and heat in the mouth and throat, great thirst, cold sweats, anxiety and death.

From all mineral poisons, more or less danger is to be apprehended, and that in proportion to the quantity taken, and the treatment. On dissection of those who died from mineral poisons, about the same appearances are presented as in case of those who die of cholera; showing, most conclusively, that this disease is produced by a specific poison.

#### *Treatment.*

In all cases of mineral poison, it will be necessary as speedily as possible to evacuate the poison, as medical aid is seldom at hand. In such accidents, the person should be directed to drink the largest quantity possible of milk, and immediately after give a large teaspoonful of the flour of mustard; and what is still better, if it be at hand, will be a teaspoonful of the pulverized lobelia, to be repeated every ten or fifteen minutes, until vomiting is produced, to be accompanied with the free use of the mucilage of slippery-elm bark; after vomiting has been excited, a wineglassful of sweet oil may be administered; it will be necessary, also, at the same time to administer injections or clysters, composed of equal parts of the mucilage of elm bark and milk, sweetened with molasses, and a gill of olive oil added; a quart of this must be introduced every half hour. Where these means fail, let a stomach pump be procured and used.

Where vomiting and other symptoms continue, an ounce of the bicarbonate of potash may be dissolved in two quarts of water, and a teacupful drank frequently; fomentations to the stomach and bowels will also prove beneficial. Lime-water is highly recommended by Orfila as an antidote to arsenic.

The same writer states, that of all antidotes to the poison of the *corrosive sublimate*, he has found the white of an egg dissolved in water to be the most powerful and efficacious; it must be diluted with water before it is given, in cases where persons have been poisoned by taking verdigris. Emetics must first be given, and afterwards a solution of *salærat* (bicarbonate of potash) should be freely taken, as directed above.

Sugar is said to be an excellent antidote to verdigris.

The effects of lead must be remedied by the use of castor oil and injections.

Muriate of soda counteracts the corrosive effects of the nitrate of silver, and it is the best antidote. A person suffering under the deleterious effects of this, should drink several glasses of a solution of the muriate of soda, in the proportion of a tablespoonful of the salt to two pints of water. Vomiting will ensue, and the symptoms will diminish.

Should they continue, recourse should be had to emollient drinks and fomentations.

Milk is the best antidote of muriate of tin, by which it is completely coagulated. The coagulum contains muriatic acid and oxyde of tin, which is not deleterious.

It has been observed, that an over-dose of tartarized antimony sometimes produces severe consequences. In such cases, our chief dependence is to be placed upon mucilaginous and diluent drinks, speedily to remove the medicine from the stomach; and, when this is done, opium, and perhaps mustard plasters may be of some service. M. Orfila conjectures, that a decoction of the cinchona bark and strong tea may aid in counteracting the injurious effects of an over-dose of tartarized antimony.

When acids have been swallowed, and prove serious, large quantities of lime-water, milk, &c. must be given; afterwards, a dose of castor oil.

When an over-dose of any alkali has been taken, vinegar, diluted with water, is the best antidote.

### Tests.

*Corrosive Sublimate, or Oxymuriate of Mercury.*—For testing the presence of corrosive sublimate, the method is, its precipitation by means of an alkali, such as the *bicarbonate of potash*, or by lime water, which detach it under the form of an orange colour or orange yellow sediment. Nitrate of tin is very delicate, as one drop only produces an immediate and copious dark brown precipitation; the matter vomited and contents of the stomach should be collected, for the purpose of being examined by these tests. A solution of corrosive sublimate, although very weak, instantly tarnishes polished silver immersed in it, and gives it a dull, putrid colour, not easily removed.

The following are the tests by which arsenic may be discovered in the contents of the stomach, where it has been administered as a poison: 1st. If a few grains of it are thrown on a red-hot iron, a smell like garlic will be perceived. 2dly. If a few grains are placed between two plates of copper, and subjected to a red heat, the copper becomes whitened. 3dly. Where the quantity is sufficient, some wheat may be steeped in a solution of it, and which, if given to chickens or small birds, will destroy them.

A simple and efficacious means for detecting the presence of arsenic, is that of Bergman. It consists in infusing a portion of the suspected matter in a solution of vegetable alkali: after standing an hour or two, pour upon it a portion of the sulphate of copper. If any arsenic is present, the copper will be immediately converted into a beautiful green, and will soon be precipitated. In this way, water, or the contents of a stomach supposed to contain arsenic, may be examined.

*Lead.*—The presence of lead may be detected by adding a little sulphuric acid, which will precipitate the mineral in the form of a white powder.

*Copper.*—When copper has been taken, the beautiful blue colour

produced in its solutions by pure ammonia, is the most decisive and satisfactory evidence that can be required. These tests will enable a person to ascertain pretty correctly the existence of any mineral substance which has been supposed to have been swallowed.

*Salts.*—When saltpetre (nitrate of potash) has been taken, a similar course must be pursued.

*Vegetable Poisons.*—Vegetable poisons are very numerous, such as *sicuta*, henbane, stramonium, *digitalis*, opium, laurel, hellebore, &c.

The symptoms occasioned by all poisonous substances of the vegetable class are, giddiness, confusion of sight, wildness of the eyes, palpitations, loss of memory and voice, stupor, nausea, vomiting, great distension of the stomach, universal twitchings and convulsions.

The bodies of those who have been destroyed by vegetable poisons, generally swell prodigiously, soon become offensive, and covered with livid gangrenous spots. On opening the body, the viscera are usually found in a sound state, but the veins are full and distended, the blood remarkably fluid, and the arteries empty. When nightshade has occasioned death, the intestines are generally inflated and inflamed, or corroded and gangrenous.

### *Treatment.*

In accidents from vegetable poisons, we must attempt the immediate evacuation of the offending matter from the stomach; and, where opium, in a state of solution, (as in the *tinctura opii*,) has been swallowed in any quantity, either through mistake, or with the view of destroying life, its removal will be best effected by employing the stomach pump, taking care well to wash out the stomach after the poison has been evacuated, by injecting two or three syringefuls of tepid water, so as to clear it thoroughly of the laudanum. Where this machine is not at hand, or promptly to be procured, the stomach must be evacuated of its deleterious contents by an active emetic, and the most proper one will be the *lobelia* or *mustard*, as advised under the head of Mineral Poisons. Where the patient is in a state of complete insensibility, and incapable of swallowing, the emetic solution may be injected into the stomach by means of an elastic gum catheter, introduced into the œsophagus from the right nostril. It is, however, only quickly after opium or any other powerful narcotic has been swallowed, that an emetic can be given with advantage, as the patient's efforts in vomiting might increase the dangerous determination of blood to the head.

In some cases of poison by opium, or such other powerful sedatives, occasioning great torpor in the stomach, so as to resist the effects of even strong emetics introduced into that organ, a scruple or half a drachm of *lobelia*, dissolved in a little water, and thrown up the intestines in the form of a clyster, has excited vomiting, and at the same time freely evacuated the entire alimentary tube. In very obstinate constipations, eight or ten grains of the medicine, administered in this way, will commonly be found sufficient to effect the desired purpose.



I consider lobelia, in the form of tincture or powder, to be the best antidote there is to all kinds of vegetable poisons; I prescribed it to one woman who had taken three large opium pills, (by mistake,) and when this article was administered, it soon removed all unfavourable symptoms. Vinegar has been much recommended for laudanum, but I know not that it is of much use.

Large quantities of diluted and mucilaginous drinks must be poured down the patient, such as peppermint tea, and the mucilage of slippery-elm bark; injections or clysters should also be freely given the patient; at the same time he must be aroused, and kept awake, and in motion as much as possible, by shaking and moving him about.

But the greatest reliance must be placed upon the speedy evacuation of the stomach by emetics and the stomach pump. It is stated, that the application of cowhage will so arouse the patient, that proper medicines can be given to counteract the effects of the poison. It is stated, also, that when other means have failed, a strong solution of ammonia has awakened the patient, and he has gradually recovered.

A late writer states, that severe whipping has had the desired effect by the irritation produced. In cases of poison, by fungi and other narcotic plants, a similar course of treatment is required.

### *Poison Vine.*

BOTH men and animals are severely poisoned by a vegetable called the poison vine, or mercury, which runs upon trees, fences, &c. It causes great heat, itching pain, swelling pain and inflammation, and gives rise to unpleasant and serious symptoms.

I have found the following an excellent remedy for this kind of poison, both for man and beast:

1st. Apply a wash to the parts, made by simmering the bark of elder in buttermilk, every two hours; after which apply a little sweet oil, and then, if practicable, a poultice made of the slippery-elm bark; give occasionally a dose of sweet oil. A horse of mine, a short time since, became so poisoned by this vine, that his eyes were entirely closed; this remedy removed the complaint in about twenty-four hours.

### *Poisonous Gases.*

The fumes arising from many of the metals in a state of fusion, or aerial solution, are extremely pernicious. Those from arsenic cause dryness of the tongue, a sense of suffocation, headach, vomiting, &c. and, by long exposure, pulmonary consumption is a frequent consequence. The fumes from mercury are highly deleterious: they occasion salivation, tremors, paralysis and extreme weakness. Those arising from lead occasion asthma, pains in the chest and body, paralysis, &c.

The external appearances of persons suffocated by the deleterious fumes arising from charcoal, coke, or fermenting liquors, (carbonic acid gas,) as well as in consequence of sleeping in unventilated apartments, or respiring the foul air of wells, privies, caverns and mines, are as follow:—the head, face and neck are swollen; the eyes are

propelled from their sockets; the tongue is protruded at one side of the mouth; the jaws are firmly closed; the face is of a livid, and the lips are of a deep blue colour; the abdomen is inflated; the body is insensible to pain, and the person appears to be in a profound sleep.

The first symptoms which the patient experiences on inhaling air vitiated with these deleterious fumes are, giddiness, headach, lethargy, fainting, convulsions and general torpor.

Immediately on discovering a person who has been suffocated by any kind of deleterious fume, the windows and doors ought to be thrown open, and the body undressed and exposed freely to cool air, being supported at the same time in a leaning posture on a chair: after a little time it must be covered with flannel or blankets, the face be sprinkled with vinegar, and the pit of the stomach with cold water. Vinegar properly diluted with cold water may be introduced into it through a flexible catheter. The legs may also be put into a warm bath; and as it is a well known fact, that the recovery of the dogs which are made the subjects of experiment in the Grotto del Cani, is much favoured by their being plunged into a neighbouring lake, possibly a sudden immersion of the whole body in cold water might be of service. After each application of vinegar and water, the skin ought to be rubbed with flannel or a soft brush, the temples and inside of the nostrils be stimulated by applying volatile spirits, and bottles filled with warm water be laid to the soles of the feet, then leaving the person for a few minutes in an undisturbed state. Farther, clysters consisting of milk and water will be useful; and on the return of life an inclination to vomit should be promoted by a feather dipped in oil, while gentle friction is to be continued at intervals. The first symptoms indicating this happy change will be foaming at the mouth and shivering of the whole body, especially after affusions of cold water. Hope should not be abandoned speedily, as persons have recovered after lying in an insensible state for some days.

Pits, wells, deep vaults, &c. should never be entered immediately after they are opened. It will be a good precaution first to let down a lighted torch or candle, for where these will not burn, animal life cannot long be sustained.

In Russia, the common people are frequently deprived of sensation by vapours arising from the following cause:—Persons of rank in that country have double windows to their houses in winter, but those of the poorer classes are only single. During frosty weather, an incrustation is formed on the inside of those windows, from a condensation of the breath, perspiration, &c. of a number of persons living together in the same room. This mephitic crust is mixed with the noxious fumes of candles, and of the stove with which the chamber is heated. When a thaw succeeds, and this plate of ice is converted into water, a deleterious principle is disengaged, which produces effects similar to those arising from the fumes of charcoal.

The method of recovering persons affected by this effluvium is as follows: They are immediately to be carried out of doors and placed on the snow, with no other covering but a shirt and linen drawers. Their temples and the region of the stomach are then to be well rubbed with snow, and cold water is to be poured down their throats.

The friction is to be continued till the livid hue of the skin disappears, and the surface acquires its natural colour.

The carburetted hydrogen gas, or fire-damp, which is formed in large quantity at the bottom of coal-pits, though not properly considered as a poison, is frequently the cause of the death of many of the miners by unexpected explosion. An apparatus has been contrived by Sir Humphrey Davy, and also by Dr. Murray, (Eng.) for preventing these dreadful effects, by consuming the gas.

#### *Prussic Acid.*

Prussic acid, being artificially obtained by the decomposition of animal substances, is generally deemed an animal acid; but it exists in a natural state in bitter almonds, the kernels of apricots, the leaves of laurel and peach blossoms, from whence it may be extracted by distillation. It has a sweet taste, smells like bitter almonds, is very poisonous; it produces the same effects on the system as laurel water, such as convulsions, paralysis and death. When an over dose of prussic acid has been taken, a portion of lobelia should be immediately administered, to be accompanied with the free use of diluent infusions or teas, and subsequently a portion of sweet, or castor oil.

#### *Poisonous Fish.*

Many kinds of fish, and such as are supposed to feed on copper banks, when eaten, prove very poisonous; to obviate the effects of which, together with muscles, lobsters, oysters, eels, &c., a smart emetic should be administered as quickly as possible, and then the patient may take the acetous acid, and likewise milk.

The patient should be kept quiet, and use a light and nourishing diet.

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**PART V.**

**OPERATIVE SURGERY.**

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1872

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## PART V.

### OPERATIVE SURGERY.

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I HAVE thought it best to describe the different operations in surgery, for two reasons :—1st. That the uninformed reader may understand the usual method pursued by surgeons, in the treatment of many diseases. 2d. That the practitioner may know how to perform any operation, in case any of the means recommended prove ineffectual. At the same time I have to remark, that it will seldom or never be necessary to use the knife, provided the principles and treatment laid down in this work be adhered to.

#### 1st. *Amputation.*

*Of the Tarsus.*—The tourniquet being applied, as in all amputations, in the lower extremity, (see the following,) a circular incision is to be made opposite the junction of the tarsal and metatarsal bones ; and the divided integuments are to be drawn up by an assistant. The second incision should be through the tendons and muscles. The tarsal bones are now to be carefully cleared from any adhering muscular substance, and to be divided with the saw ; saving as much of the foot, as the disease for which the operation is performed will admit of. After the arteries have been secured, the integuments are to be brought over the extremity of the bones, and united by the first intention.

*Of the Thigh.*—The most proper part for the application of the tourniquet in this, and in all other amputations of the lower extremity, is about the middle of the thigh, where the artery in its course passes near to the bone. The pad should be placed immediately above the vessel, and firmly secured in its situation by tightening the screw on the other side of the limb.

After this has been adjusted, the limb being supported by an assistant, a circular incision should be made through the integuments, immediately above the knee-joint ; and, any adhesions that may impede their retraction having been separated, they are to be drawn up as high as possible, when a second incision should sever either the whole of the muscles of the thigh, or the loose muscles only ; leaving those attached to the bone to be divided by a third.

The bone, now exposed, is to be cleared of its periosteum, and any portions of muscle that may still adhere ; and then to be divided with the saw, at that part where it is connected with the retracted integuments : should any spicula or projecting points remain, these are to be removed.

The next step is to secure the arteries ; and this should be carefully done by means of the tenaculum and ligature. A flannel or linen

roller is then to be passed around the thigh, to prevent the retraction of the muscles; after which the integuments are to be brought together, and preserved in contact by means of adhesive straps; suffering the ligatures to hang from one corner of the wound.

The stump is to be covered with a pledget of soft lint, which should be preserved in its situation by a broad piece of linen or a laced stocking.

The patient may now be conveyed to bed; where the stump should be laid upon a soft pillow, and protected from the bed-clothes by a hooped frame. It will also be proper to administer an opiate, and to suffer the tournequet to remain loosely attached to the limb, as a means of speedily restraining any hæmorrhage that may accidentally occur.

At the expiration of a week the dressings may be removed, and the ligatures withdrawn.

*Of the Leg.*—The tournequet being properly applied, and the leg supported as before directed, an incision is to be made through the integuments, about six inches below the knee; and when the adhesions which connect them to the forepart of the tibia and fibula have been separated, they are to be drawn up by an assistant.

The muscles of the leg are next to be completely divided by a circular incision, close to the retracted integuments.

The object is now to divide all that connecting substance between the two bones: this is to be done by means of a sharp-pointed double-edged knife, made for this purpose. After which both the bones are to be sawn through, by the same action of the saw, at a distance from the knee, equal to the breadth of the hand. The remaining part of the operation will be exactly similar to the before described.

*Of the Humerus.*—In amputations of the superior extremity, the most convenient part for the application of the tournequet, is about midway between the shoulder and the elbow-joint; where it is to be adjusted as before described, with the pad over the principal artery.

The first incision is to be begun about an inch above the joint, and the operation concluded precisely as in the thigh.

*Of the Fore-Arm.*—As in the leg before the knee.

#### *Another Method.*

Place a garter, or narrow strip of linen, around the limb, fasten it to a stick, and twist it till the circulation stops. Let the limb be grasped above and below by two assistants; then cut the integuments down to the bone, separate as far as possible the integuments by strips of muslin, and then saw the bone directly through, without any further dissection, to cover the stump. The stump is now to be covered with lint, and an emollient ointment or salve to be placed over the dressing; a narrow bandage is to be placed immediately above the stump, around the limb, and drawn considerably tight, to prevent the necessity of tying the arteries, which, together with the usual operation of dissecting the integuments, constitutes two thirds of the pain of amputation; and the stump, by this method, will be equally as good.

*Femoral Hernia.*

*The Operation.*—The patient being commodiously laid, the hair removed from the parts, and other necessary preparations made, the tumour is to be firmly grasped with the left hand, while an incision is made (if it be not extremely large) through the integuments, along its whole extent. By this the skin and cellular substance will be divided, and a *thin facia* exposed, which is given off by the external oblique muscle. Through the middle of this a small opening is then to be made, for the introduction of a director, by the assistance of which it is to be dilated upward to within one inch of the abdominal ring, and in a similar manner downwards to the bottom of the tumour. The second covering of the sac, or the *cremaster muscle*, next comes in sight, and this being divided precisely as the preceding fascia, the sac itself is exposed to view. The anterior and inferior portion of the sac is now to be pinched up between the fingers, and being thereby separated from its contents, a small hole is to be made into it, in a horizontal direction; after which it is to be carefully dilated in the same manner as the preceding tunics.

The next step is to remove the stricture; in order to ascertain the seat of which, the finger is to be insinuated between the intestine and the sac, and carried up to the mouth of the tumour. It will be found in one of these situations; either at the opening into the abdomen, an inch and a half to the outer and upper side of the abdominal ring, at the external or abdominal ring, or in the sac itself, rendered preternaturally thick by the previous pressure of a truss, or constricting the contained parts by means of a septum which has been formed across it in consequence of inflammation. In order to dilate the strictured part, the finger must now be made the guide to a blunt-pointed bistoury, which is to be carefully passed up on the outside of the sac, if the stricture be in either of the two first-mentioned situations, but on the inside if in the last; and having reached the desired part, an incision is to be made through the tendon, or other resisting substance, in a line *directly upwards*, of sufficient extent to admit of the return of the protruded parts.

Having thus removed the stricture, the state of the lacerated parts is to be carefully examined. When the intestine remains sound, it is sound to the touch; the brown colour, invariably acquired under strangulation, soon lessens, or entirely disappears; and the blood, when pressed from a vein, speedily returns. If thus free from injury, it should be immediately returned into the abdomen, carefully dissecting any adhesions that may have formed between it and the sac. If, on the contrary, the injury it has sustained by strangulation has been so great as to have induced mortification, it will be found of a deep brown, or chocolate colour, covered with a layer of brown coagulable lymph, fetid, and interspersed with purple or leaden-coloured spots, which readily break down under the impression of the finger. In such cases the following treatment is recommended: if a small portion only of the cylinder be diseased, a ligature is to be passed through the attached mesentery, at right angles with the intestine, and then



through the mouth of the hernial sac, when by this means the intestine becomes confined to the aperture, adhesions form, and an artificial anus is produced. The opening has, however, in some instances, after a time, closed; and the fæces have resumed their natural course: but when the whole cylinder is mortified, the diseased part should be cut away; the divided ends brought together, and united by means of four ligatures, inserted around the intestine.—(See *Wounds of the Intestines*.)

The omentum is now to be inspected. This, even in a diseased state, retains its natural appearance; the presence of mortification is ascertained by its fetid smell, and upon cutting into it, by the blood, instead of flowing from the vessels, being found coagulated. If in a healthy state it may, if not very large, be returned into the abdomen; if it be diseased, or if its bulk be very considerable, it is directed to be removed with a knife, and the vessels secured by very fine ligatures, which should be suffered to hang from the edges of the wound.

The external wound should be closed by suture, the patient laid in bed, and rest procured by opiates.

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### *Operations in the Cataract.*

There are two methods in general use: the first is called couching, the second extraction.

*Of the Operation of Couching.*—To guard as much as possible against the effects of inflammation, the patient should be confined for several days previous to the operation to a low regimen; if plethoric, he should be purged, and two or three doses of some cooling laxative should be administered after proper intervals. These, and other necessary preparations being made, the patient should be so placed that light may fall upon the eye in one direction only; he should be seated in a low chair; the operator should also be in a sitting position, but more elevated, his elbow resting upon his knee, properly raised; his ring and little finger supported upon the cheek or temple of the patient. The upper eyelid is to be elevated by an assistant, and the lower depressed by the right hand of the surgeon; or the eye is to be fixed by means of a speculum, invented for the purpose. The couching needle (the best construction of this instrument, is that recommended by Mr. Hey.—See his *Observations in Surgery*,) is now to be entered in a horizontal direction, through the sclerotic coat, a little below the axis of the eye, and about a quarter of a line beyond the transparent cornea, so as to get entirely behind the iris; taking care not to wound this, by opposing to it the flat side of the instrument, if a needle of this form has been made choice of. Its point is then to be pushed towards the centre of the eye, (*Mr. Hey*,) and when discernible through the pupil, it is to be fixed in the body of the lens, if solid, is to be pushed down by one, if fluid, by several movements, to the bottom of the vitreous humour. The needle is then to be withdrawn, the eyelids closed, and covered with a soft compress moistened with a saturnine solution, or (as recommended by Mr. Pellier) co-

vered with a linen bag, half filled with fine wool, applied dry, and fixed to a circular bandage passed around the forehead. This should not be removed before the eighth day, during which time the antiphlogistic regimen should be strictly enforced.

Should the lens, before the absorption takes place, regain its former situation, a repetition of the operation may become necessary. —(See *Hey's Observations in Surgery*.)

*The Operation of Extraction.*—The patient and operator being placed, and the eye fixed as for couching, the point of the cornea knife, (the blade of this is formed like a spear-pointed lancet; on one edge it is sharp throughout its whole extent, on the other only a short space from its point,) with the cutting edge downwards, is to be passed into the transparent cornea, at about one twelfth of an inch from the opaque, and as high as the centre of the pupil; it is then to be carried forwards to the point opposite to that at which it entered; this being pierced, it should be again pushed on, until, by its increasing breadth, the outer angle of the transparent cornea has been completely divided, and a semilunar flap has been consequently formed. A small needle, invented for the purpose, with a hook at its extremity, is now to be introduced beneath the flap, to be passed cautiously through the pupil, and with it an opening is to be formed in the capsule of the lens, by gentle and repeated scratches, with its curved point. This being done, the eye is to be shaded, to allow the pupil to dilate as much as possible; after which, upon gentle pressure being made upon the eyeball, at either the upper or under edge of the orbit, the crystalline lens will pass out through the opening made in the cornea.

When the cataract does not come out entire, or where it is found to adhere to contiguous parts, the small scoop should be introduced, to remove any detached pieces or adhesions that may be present.

When the opacity is solely in the capsule, some practitioners attempt to extract first the lens, and then the capsule, by the forceps or tenaculum; others, (*Bere*,) the lens and capsule entire; detaching them from their connexions by lateral motion with the needle. In many instances it has become partly absorbed after the extraction of its lens. The subsequent treatment will be precisely as above described.

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### *The Operations for Aneurism.*

*For Aneurism in general.*—The necessary preparations being made, and the patient placed in a commodious position, the first step ought to be to obtain a perfect command over the circulation of the inferior part of the member, by means of the tourniquet. After this has been adjusted, the operator is, with a common scalpel, to make an incision through the skin and cellular substance, along the whole course of the tumour. On the latter being thus exposed to view, a small opening is to be made into it with a lancet, of sufficient size for the admission of the finger; when the whole cavity is to be fairly laid open, from one extremity to the other, by running a blunt-pointed bistoury from below upwards, and afterwards from above downwards. The next step is

to clear the cavity of its contents, by means of the finger, assisted by a sponge. This being done, the tourniquet is to be slackened, in order to discover the opening into the artery; when this is perceived, after renewing the compression, a probe is to be introduced, so as to raise the vessel, or it may be taken hold of by a pair of small forceps, and being thus exposed, it is to be secured by a strong ligature passed around it, by means of a blunt curved needle, about half an inch above the opening into the tumour. The inferior portion of the artery is next to be tied in like manner, and the ends of the ligatures being brought over the edges of the wound, the latter is to be covered with soft lint, and a pledget of emollient ointment. A compress of linen is then to be applied over the whole, and secured by a roller *lightly* passed around the limb; after which the patient is to be conveyed to bed, the limb supported by a soft pillow, laid in a relaxed posture, and covered with warm flannel. As in all other operations of a similar nature, it will be prudent to allow the tourniquet to remain upon the limb, without any degree of pressure, till the danger of hæmorrhage is over.

It is recommended by surgeons of the present day, in every case where such a mode of practice can be admissible, to expose the artery in a convenient situation above the tumour, and to secure it by ligature, in the manner for aneurism of the popliteal artery.

*For Popliteal Aneurism.*—Mr. Home gives the following directions for the improved mode of operating for popliteal aneurism. in Transactions of the Society for the Improvement of Medicine and Surgery.

An incision is to be made, about three inches in length, on the anterior and inner part of the thigh, at or below its middle, in a direction obliquely across the inner edge of the sartorius muscle. This, after being exposed, is to be drawn to the outside of the thigh, when the fascia covering the femoral vessels will immediately be seen. A slight incision is then to be made with extreme caution through this fascia, and the artery, thus laid open to view, is to be separated from its lateral connexions with the knife, or by the help of a thin spatula. A double ligature is now to be passed behind it, by means of an eyed probe properly curved, taking care not to include the contiguous femoral vein, which is situated on the inside, and the nerve which is situated to the outside of the artery. The doubling of the ligature is then to be divided, and the two thus formed are to be separated, and securely tied at about the distance of half an inch from each other. After which, the intermediate portion of the artery is to be cautiously divided, and the ends of the ligatures brought out of the wound, the sides of which are to be kept in apposition by straps of adhesive plaster, in order to effect a union by the first intention. The subsequent treatment will be, in every respect, similar to that above described. The ligature may be removed with safety in about twelve days.

*Fistula in Ano.*

*Operation for Fistula.*—An operation is performed in the following manner: The patient being placed with his back towards a window, while his body leans upon a table or bed, the finger, covered with a bland oil, is first to be introduced at the rectum; after which, if the fistula be complete, a probe is to be passed along its course, until its extremity reach the internal opening, and touch the finger in the rectum; a probe pointed bistoury is then to be passed along the probe, and having reached the opening in the intestine, its handle is to be elevated, and its point depressed as much as possible by the finger previously introduced, and in this manner gradually drawn out at the anus; by which means a complete incision will be made of the intermediate space between the sinus and the gut.

If the fistula be incomplete, having no internal opening, an artificial communication with the intestine must be made; this is most easily effected by means of a curved bistoury with a concealed point, which may be pushed forwards through the coats of the gut, when the instrument has reached the extremity of the sinus.—(*Mr. Hey.*)

Should the matter have so insinuated itself along the cellular membrane, as to cause several external openings; they are to be successively dilated, until all are laid into one.

The edges of the wound are to be prevented from uniting, and dressed with some stimulating application. If any callous parts are observable, they are to be touched, by means of a camel's-hair pencil, with ammonia muriata, or with hydrargyrus nitratus ruber.—(*Hey.*)

When an abscess is discovered in the neighbourhood of the anus, and is suspected to communicate with the rectum, by a discharge of matter by stool, suppuration is to be accelerated by the application of fomentations and poultices, and an early opening should be made; by which means the sinus will be reduced to the first of the above species.

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*Tapping, or Paracentesis of the Abdomen.*

The operation is supposed to be necessary when the pressure of the water contained within the cavity of the peritoneum is so great as to impede the function of respiration.

During the operation, the patient should be in a sitting posture, with a vessel for the reception of the fluid placed between his legs, and his body encircled with a long bandage or towel, the ends of which are to be held by two assistants. These preparations being adjusted, and the patient having been directed to void his urine, or a catheter having been introduced for the purpose of drawing it off, a small incision is to be made, with a common lancet, about an inch below the umbilicus; after which a lancet-pointed trochar is to be pushed forwards, till, from no longer meeting with resistance to its passage, it is ascertained



to be within the cavity of the abdomen ; the stilet is then to be withdrawn, and as the fluid is evacuated, the bandage, previously fixed round the abdomen, is to be drawn tighter and tighter, to prevent the effects of a sudden removal of the accustomed pressure.

After the whole of the water has thus escaped, the wound is to be closed by adhesive plaster, and the body to be encircled with a roller of flannel, which should be suffered to remain for some days after the operation.

It is recommended by Dr. Sims, in the *Memoirs of the London Medical Society*, to introduce the trochar at the umbilicus. In this case the first incision will be unnecessary.

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### Castration.

This is one of the most simple operations in surgery ; but, before it is undertaken, be cautious that the disease does actually require to be removed, and particularly bear in mind the circumstances which should regulate its removal.—(*Cooper.*)

The manner of operating is as follows :—The patient being laid on a table of convenient height, you grasp the testicle in your left hand ; begin your incision at the upper part of the abdominal ring, and extend it to the lower extremity of the testicle. Lay bare the spermatic cord completely at the abdominal ring. The spermatic cord having been detached from its rounding connexions, with your finger and thumb, separate the blood-vessels from the vas deferens, pass a ligature between them, and having tied the former only, cut through the whole cord, at a quarter or half an inch distance from the said ligature, according as the state of the process and testicles will admit. This done, you must then, with the same knife, with which you have performed the former part of the operation, dissect the testicles out from its connexion with the scrotum ; the loose texture of the connecting cellular substance, the previous separation of the testicle from the spermatic cord, and the help of an assistant to hold up the lips of the wound, will enable you to accomplish the operation with very little pain to the patient, and great facility to yourself.

The arteries which require securing are, the spermatic artery, the artery of the vas deferens, and several in the scrotum. These should be tied with fine silk ligatures.

The vessels which we have here named, are not, says J. L. Petit, the only ones which may be the source of hæmorrhage ; for troublesome bleeding will sometimes arise from the artery of the septum. If this should be the case, he recommends it to be suppressed by a ligature.

After the operation, Pott used to fill the cavity of the wound with lint ; but Desault, and all the modern surgeons of that country, bring the edges of the wound together, and endeavour to heal as much of it as possible by the first intention.

With this view, some use sutures and sticking plaster ; others, only the latter, aided with compresses and a T bandage. Sir Astley Cooper employs two sutures ; one opposite the end of the cord ; the other at the mid-point between the first suture and the determination

of the incision. Mr. Lawrence's plan of dressing consists in retaining the edges of the skin in apposition with two or three sutures, and then applying a narrow strip of simple dressing. A folded cloth, kept constantly damp, is also laid over the wound.

Sometimes one or more vessels begin to bleed soon after the patient is in bed, although they effused no blood just after the removal of the testicle.

Keeping the dressings and scrotum continually wet with the cold saturnine lotion, very often suffices for the prevention and suppression of hæmorrhage: if not, the wound must be opened again, and the vessels tied.

### *Trepanning, or Trephining.*

*The Operation.*—The first step to be taken (the incision being previously made) is to remove as much of the pericranium as will be sufficient to admit the application of the trephine. This is performed by means of an instrument called the engine. The trephine, with its annexed perforator, is then to be applied, including within its circle a larger portion of the depressed than of the sound bone; and, after having made a few turns to secure it in its situation, the central pin or perforator should be removed, as no longer useful, and the operator is to proceed, with great caution, to saw through the bone, using a semi-rotary motion with the instrument backwards and forwards, occasionally brushing the accumulated particles of bone from its teeth, and often, with a probe, examining the sulcus which has been made, to ascertain if any part be already perforated. As soon as this is the case, redoubled caution must be used, and the instrument should be made to bear upon the unperforated parts, until the bone becomes sufficiently loose to be removed with the forceps or elevator.

The parts beneath the cranium being now exposed to view, if the replacement of a depressed piece of bone be the object of the operation, it is to be effected by means of an instrument called the elevator. This acts as a lever, the fulcrum to which should be either the sound portion of bone, or the finger laid over it. Should an accumulation of blood have given rise to the symptoms, the fluid will now, if situated between the dura mater and the bone, have a free exit; if it be collected beneath the dura mater, that membrane will be found tense, dark-coloured, or even livid. In this case, an opening is made.

If, after the operation, any points of bone remain attached to the sides of the orifice, these should be carefully separated by the forceps or the elevator.

For the treatment of the wound, the following rules are necessary: If the operation has been performed for fracture or depression, unless pieces of bone are expected still to come away, union should be effected by the first intention; if for the evacuation of blood or matter, (see *Inflammation of the Brain*,) the sore is to be dressed in the lightest and easiest manner, and a speedy suppuration invited by emollient cataplasms.

A saw has been invented by Mr. Hey, (see *his Observations in Surgery*,) with which protruding points may be removed, so as to admit the

elevator, with the loss of a very small portion of the injured bone. This should be substituted for the trephine.

### *Bronchotomy, or Opening the Windpipe.*

The patient should be in the sitting posture, the body bent a little forward, the head turned back.

The first incision should be through the integuments, midway between the sternum and the cricoid cartilage: the arteries of the thyroid gland will by this means be avoided. The trachea being thus exposed, an opening must be made with the point of a lancet, of sufficient extent to admit of the introduction of the canula. This is now to be passed into the artificial opening, and to be secured in its situation by means of a bandage, previously connected with it, passed around the neck. Its mouth should be covered with a piece of thin gauze, to prevent the admission of extraneous matter; and, when the causes which endangered suffocation have been removed, it is to be withdrawn, and the wound healed as an accidental wound of the part.

### *Enlarged Tonsils.*

When the tonsils are too large to admit of cure, by the plans already described, or when they resist the proposed methods, they are removed by a *ligature*.

It is easily applied, and may be done by first passing it through the eye of a probe, (previously curved for the purpose,) then carrying it over the tonsil, bringing it out below, and tie in front of the diseased gland. If your finger should not be sufficiently long to make the knot, you should then use the *tonsil iron*, an instrument well adapted to the purpose, and would do much better for performing the operation altogether, than either the probe or finger.

If the tumour is not of that form which will admit of a ligature being put on in the way just mentioned, you must then pass the ligature through the centre of the swelling, by means of a needle, and tie it above and below: your ligature must, of necessity, be double. In this way, you will succeed, as effectually as with the other mode, in producing a separation of the enlarged part.—(Cooper.)

### *Tongue-Tied.*

It very frequently happens, that the tongue of infants is tied, that is, that the *frænum linguæ* is so short as to prevent the tongue from being protruded to or beyond the gums; in which case, an operation becomes necessary, for dividing the *frænum* by which it is confined.

*Cutting the Tongue.*—In performing this, some little care and steadiness are required, or the sublingual veins and arteries may be wounded, and the infant die of hæmorrhage. To avoid the danger, a small curved bistoury may be used instead of scissors, usually employed. The handle and blade, when open, need not exceed two inches in length; and the point should be a little curved, and the back made broad, whereby the point may be easily forced through the *frænum*, in the most troublesome case, while the back of the instrument will sufficiently press down the vessels, so that they will be entirely out of the way of being injured.—(Cooper.)

*Of the Application of Leeches.*

The manner in which leeches are usually applied, is so well known as not to require description. Success is rendered more certain by previously drying them, or allowing them to creep over a dry cloth ; the part, also, to attract them, may be moistened with cream, sugar, or blood ; and, if still not fastening, it may be cooled with a cloth dipped in cold water. Their escape should be prevented by covering them with a small glass.

*Of Scarification and Cupping.*

This is performed, where the part will admit, by means of an instrument called the scarificator, in which a number of lancets are placed in such a manner, that when it is applied upon the affected part, the whole are, by means of a spring, pushed suddenly into it, to a depth at which the instrument has been previously regulated.

After scarification has been performed in the above manner, bleeding is promoted by means of glasses, from which the air has been exhausted by heat, or by an exhausting syringe. The usual mode of applying heat is by holding the glass over the flame of a lamp. An equally or more effectual method is, to moisten a small piece of tow with spirit of wine, to set it on fire in the bottom of the glass, and on the flame being nearly extinguished, instantly to apply it over the scarified part. The glasses are to be occasionally removed, and again applied, until a sufficient quantity of blood has been drawn.

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The operations which are performed for some other diseases, are inserted under their respective heads.



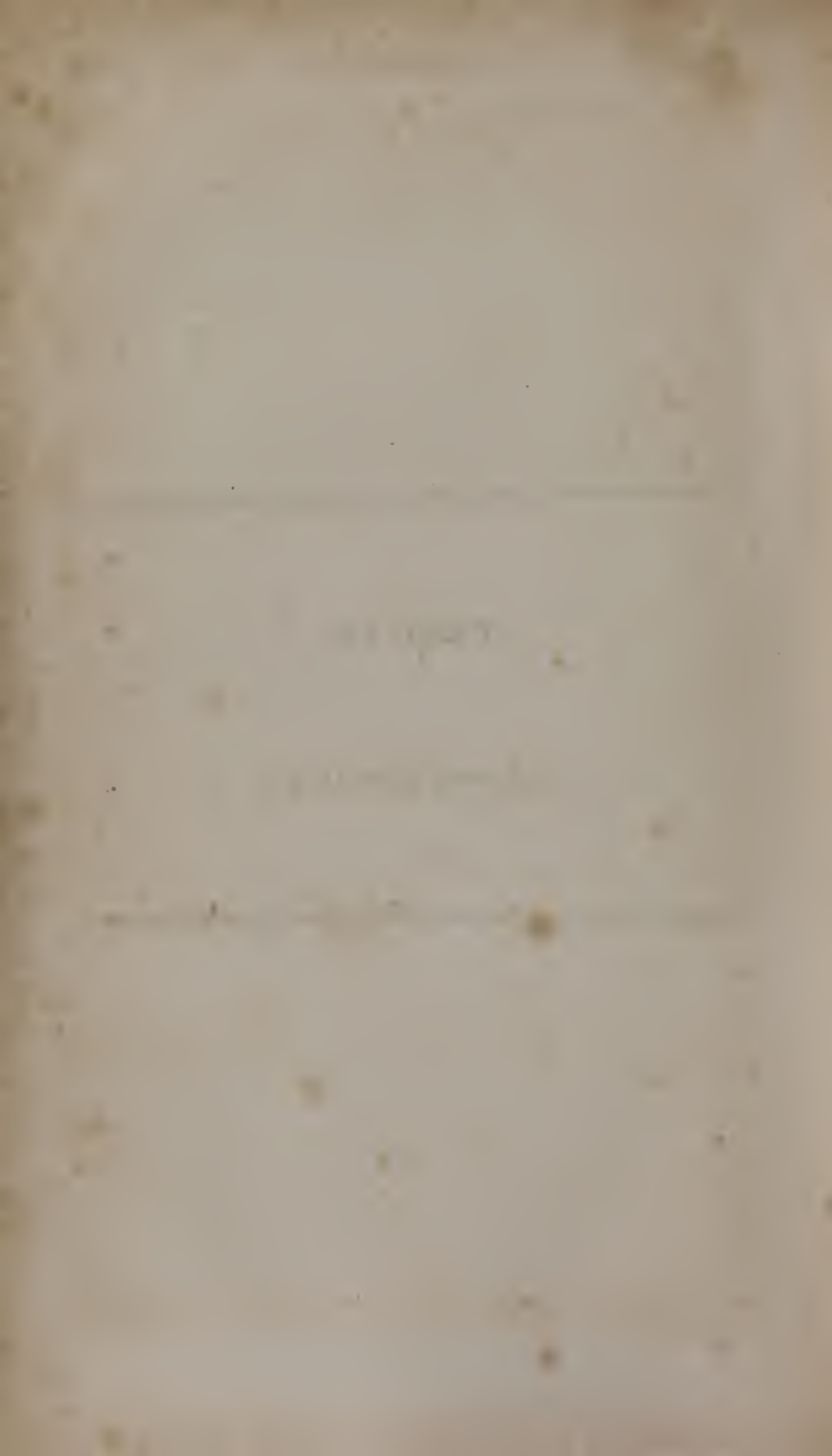


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**PART VI.**

**ILLUSTRATIONS.**

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## PART VI.

### ILLUSTRATIONS.

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FOR want of room, I can insert, comparatively, but a few cases of illustrations which have been successfully treated at the Infirmary connected with the Reformed Medical College, and that very briefly. Besides, for want of time, I am under the necessity of inserting some cases promiscuously. We treated over *one thousand cases of Cholera* during the epidemic, none of which are here given. But, perhaps, more (though a vast many would be very interesting) might be considered superfluous. I wish the reader to understand, that the diseases were all treated according to the directions laid down in this work, although there may have been some variation in the formulas or prescriptions used. We also wish it understood, that we are not so tenacious about the precise agents or medicine employed, as we are of a strict adherence to the *theory* or principles advocated.

#### FEVERS.

*Case 1.* J. K., Gocerck-street, aged 12 or 14 years, was seized with the typhus fever; he was so far reduced that no hopes were entertained of his recovery. Matter discharged from his eyes, ears and nose; he was exceedingly emaciated. The treatment pursued at the infirmary restored him to health, contrary to the expectations of every one. Neither bleeding, calomel, or any other mineral was used.

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*Case 2.* The daughter of the late M. Nash, school teacher, aged about 15, had the same complaint, (typhus fever,) and was brought extremely low with it. Soon after she commenced the use of our medicine, she grew better, and soon entirely recovered. Her case was considered extremely dangerous.

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*Case 3.* Mr. Boardman, of the firm of Boardman & Co., Water-street, was taken with a bilious remittent fever so severely, that he was scarcely able to articulate a single sentence. Excessive debility, violent fever, more or less delirium, and all his symptoms highly aggravated. Instead of bleeding and administering mercury, medicine was given to produce perspiration, which was continued until the fever was subdued. His sudden recovery was a subject of remark by all who saw him.

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*Case 4.* Mr. Vankirk, Forsyth-street, was so far reduced by bilious remittent fever, that little hopes were entertained of his recovery; but in six hours after he commenced the use of our medicine, he grew better, continued to mend, and in a short time was well.

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*Case 5.* Mr. R., Delancey-street, was reduced extremely low of the same fever. The same treatment soon arrested the disease, and restored him to health.



*Case 6.* Mrs. Low, Suffolk-street, two doors below Stanton-street, was seized with a fever so violent, that she was relinquished by the physicians, who stated that it was impossible for her to recover. Her pain was violent, skin exceedingly dry, tongue excessively furred, great thirst and great prostration of strength, respiration very laborious, with every dangerous symptom. In this unfavourable condition we commenced the use of our medicine, which in two hours produced copious perspiration, which, with other means, arrested the progress of the fever, and in a few weeks she entirely recovered. The treatment, she states, snatched her from an untimely grave.

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*Case 7.* Mr. D., arrived from the West Indies, was taken with symptoms of the yellow fever. The medicine given him produced such a copious perspiration, that in twelve hours the fever was removed.

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*Case 8.* Mr. B., just arrived at Quarantine, from New-Orleans, with symptoms of yellow fever. He was attended by a physician, whose treatment proved altogether useless. I then administered medicine which removed large quantities of bilious matter, after which, a copious perspiration was produced, which soon relieved and cured him.

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*Case 9.* Esquire M. had been afflicted for months with intermittent fever, attended with cough, which gave an alarming character to the disease. He applied at the infirmary, and was, in a few weeks, entirely restored to health. We might here enumerate hundreds of cases of scarlet, intermittent, inflammatory and other types of fever, which we have speedily cured by a course of vegetable medicine alone. Time will not permit us to particularize, neither do we deem it necessary.

We might here also mention various cases of eruptive and other diseases, small-pox, measles, &c., which have been treated with the same uniform success.

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### *Inflammatory Diseases.*

*Case 10.* Mrs. T. had been long afflicted with inflammation of the liver, characterized by pain in the right side and shoulder, secretion of bilious matter, vomiting and purging, great debility, &c. She had been attended for years by a physician, with injury instead of benefit. She applied at the infirmary, and soon experienced a remission of her symptoms; scarcely a vestige of the disease now remains.

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### *Pleurisy.*

*Case 11.* Mr. Moore, Christie-street, a few doors from Broome, was attacked very severely with the pleurisy. He had been subject to

this disease, and his physician had always bled him profusely. This, he found, had injured his constitution, and he now wished to submit to a different course of treatment. He accordingly applied at the infirmary, and was soon cured, without bleeding or mineral medicine. At every previous attack, he had been confined to his bed for three months by excessive depletion; by our treatment he retained his strength, and in a few days he was enabled to resume his business.

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*Case 12.* Mrs. N., Orchard-street, was taken so severely with the pleurisy, that she could scarcely articulate a syllable. She appeared almost in a dying state, and yet, *without bleeding*, in fifteen minutes her pain was mitigated; and in a few days she was well. Had she pursued the ordinary depletive course, in all probability she must have been confined to her room for several months.

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#### *Inflammation of the Lungs—(Pneumonia.)*

*Case 13.* Mr. R. had been for a length of time severely afflicted with inflammation of the lungs. The pain, cough and fever were incessant and excessive. Our treatment soon relieved all the symptoms, and he was restored to health, without bleeding even once. When we commenced, the case was considered entirely hopeless.

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*Case 14.* Mr. S. was attacked with the same, or similar symptoms. The same treatment soon restored him to health.

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*Case 15.* A man in Walker-street, name not recollected, was taken so violently with inflammation of the lungs, that there was little or no prospect of his recovery; fever high, cough almost constant, expectoration of purulent matter, with great debility, and every symptom of approaching dissolution. The treatment pursued soon arrested the disease, and he now enjoys good health.

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#### *Inflammation of the Kidneys—(Nephritis.)*

*Case 16.* Mrs. Matthews, then residing in Nassau-street, below Beekman, was seized so violently with inflammation of the kidneys, that she was thrown into spasms, became delirious, &c. Contrary to the expectation of every one, she recovered by our treatment.

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*Case 17.* Mrs. Trembly, then residing in Vandam-street, was seized with the same complaint; and the same treatment produced the same effect.

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#### *Inflammation of the Eyes.—(Ophthalmia.)*

*Case 18.* Captain Allen, from Rochester, N. Y., was seized with

an inflammation of the eyes, peculiar to that section of the country. He was attended by various physicians, who cupped, bled, blistered, salivated and nearly starved him to death. Their treatment almost ruined his eyes and constitution. In this situation he came to New-York, and applied at the eye infirmary, where he received no encouragement; he then applied at our institution. He was here led blind, and in a most pitiable and deplorable condition. His eyes appeared like ulcers which discharged a great quantity of pus or matter. We then commenced our treatment, which removed the inflammation, and excited a healthy action of his eyes and whole system, and after a few months, entirely recovered; although his vision will ever remain impaired.

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*Case 19.* Mr. Wright, Forsyth-street, near Delancey, was afflicted with the same disease, and in about the same condition of the case last mentioned. He had been attended for one or two years by various physicians in the country and in this city. He had been blind for about one year. He had likewise been cupped, blistered, salivated, and a seton put through his neck. After being in this state, and given up as incurable, we commenced with him; and under our treatment he began rapidly to mend. He can now see, and is able to attend to his business.

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*Case 20.* Mr. West, John-street, opposite the Arcade, was severely afflicted with ophthalmia, or inflammation of the eyes. One or two physicians from the eye infirmary cupped, bled and leeched him, which only aggravated the disease. Our treatment soon removed his symptoms, and cured him.

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*Case 21.* John Morris, in Forsyth-street, a boy aged about ten years, had been afflicted with *ophthalmia tarsi*, a disease of the eyelids, for two years. He was unable to find any relief until he applied at our institution, where he was soon cured.

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*Case 22.* Mrs. R. had become nearly blind from the small-pox. Our applications and treatment cured her in a few weeks. The treatment received by a former physician was of no use.

We have successfully treated hundreds of cases of inflammation of the eyes, which might be enumerated.

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### Quinsy.

*Case 23.* A short time since, a child of Mr. —, living at No. 45½, Hester-street, aged about seven years, was violently attacked with *Cynanche Tonsilaris*, or inflammatory sore throat, in which the swelling was so great, as almost entirely to prevent swallowing, and caused great fear of suffocation:—The system was also universally affected. A physician belonging to the U. S. infirmary, was called, who, without using either the lancet or calomel, or, in fact, any of the long

list of poisonous drugs, soon gave relief, and the child was restored to its usual health in three or four days. A few days after, two other of his children were taken in a similar manner; and he, being poor, and thinking himself unable to pay a physician, sent to the dispensary for advice. A physician from that place was accordingly sent, who, commencing with his calomel, &c., soon prostrated them. The poor children were brought extremely low, but the disease remained unsubdued; however, their good constitutions seemed to resist both the disease and the deadly remedy for the space of four or five weeks, when the youngest one died, and the other one, although in a miserable state, may have recovered.

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*Case 24.* Mr. B., Attorney-street, was attacked so severely with the quinsy, that he was nearly suffocated. Our treatment soon removed the complaint.

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*Case 25.* Mrs. L., in Orange-street, near Broome, was seized with inflammation of the throat, which was very severe. In one hour our medicine relieved her, and in a few days she was cured.

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*Case 26.* A lady, name not recollected, in the same neighbourhood, was seized with the same complaint; and the same treatment soon cured her.

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### *Rheumatism.*

*Case 27.* Mrs. L., Lombardy-street, was taken very ill with inflammatory rheumatism, and was scarcely able to move a limb. She had been subject to it, for which she had been previously bled; but our treatment in a short time removed her complaint.

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*Case 28.* One of Mr. Horton's workmen, in Stanton-street, had been for six months afflicted with the rheumatism and confined to his bed. A physician had treated him, and bleeding, blistering and mercury were used without effect. His pains were so excruciating that his cries could be heard a whole block. We attended him for about six weeks, at the end of which time he was cured, and again commenced his business.

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*Case 29.* Mr. L., from South-street, was brought to our infirmary in a carriage, helpless. He took our medicine a few weeks, and was entirely restored to health.

Numerous cases might be mentioned, where persons have been cured of this disease by our treatment, when the ordinary method was useless or injurious.

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*Case 30.* Mr. Ely, from New-Haven, Conn., was brought to this city in a helpless state, from inflammatory rheumatism; great swelling of



the joints, excessive pain, &c. The physicians who attended him, were unable to render him any benefit. After submitting to our treatment for a few weeks, he was enabled to return to his business, and was restored to health.

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### *Dyspepsia, or Indigestion.*

*Case 31.* Mr. De Forest had been seven years afflicted with dyspepsia, or liver complaint. He was unable to perform any manual labour, and had despaired of ever being restored to health. He tried various physicians in the city and country, without receiving any benefit. He submitted to a course of our medicine, which soon produced the most signal good effects, and after some time effected a cure.

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*Case 32.* Mrs. P., Attorney-street, was so far reduced with dyspepsia, that she had but little flesh remaining, and could scarcely take any food. Her health and spirits were gone, and no prospect remained of ever enjoying them again. After taking our medicine a few weeks, her appetite was restored, she became fleshy, and now enjoys good health.

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*Case 33.* Mr. Welsh, of Kingston, N. Y., had been for a long time afflicted with the liver complaint, or dyspepsia. He had been confined to his house and bed for a length of time, and his case seemed hopeless, his physicians not being able to relieve or cure him. By the use of our remedies he entirely recovered, and now enjoys excellent health.

*Case 34.* Mrs. L., Elm-street, near Spring, had been afflicted with dyspepsia for some time. She could get no relief until she applied at the infirmary, and was soon cured.

A score of similar cases might here be mentioned.

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### *Incipient Apoplexy.*

*Case 35.* Mr. M., corner of Prince and Green, was seized with all the symptoms of apoplexy in its first stages. The treatment we adopted restored him to health, and he has remained free of the complaint ever since.

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*Case 36.* Mr. L. applied at the infirmary with the same symptoms: the same treatment effected a cure.

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### *Dysentery.*

*Case 37.* A young lady, name not taken down, residing in Eldridge-street, near Broome, was seized with the dysentery, with the most

violent symptoms; pain very great. The medicine given by her physicians, Dr. V. Z. and Dr. D., only injured her. We were called upon, and we commenced our treatment; in one hour the pain subsided, and in a few weeks she was enabled to return to her home in the country.

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*Case 38.* Mr. L., now residing in Elm-street, above Broome, was reduced nearly to a skeleton, by the chronic dysentery. Our treatment soon restored him to perfect health.

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*Case 39.* The wife of Mr. Higgins, in Division-street, had been afflicted for a long time with the same disease. She had been attended a long time by a physician, without any benefit. She was so far reduced, that she began to despair of ever getting better. In this situation we found her, when called to administer relief; and, as in other cases, she was soon restored to health.

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### *Cholera Morbus.*

*Case 40.* The daughter of Mr. Robinson was taken with the cholera morbus. A physician was sent for, but could administer no relief. We were called to visit her when she was nearly dead. Her eyes were sunken, senseless, constant vomiting and purging. An energetic course of treatment was immediately adopted, which in a few hours changed the character of the complaint, and effected a cure.

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*Case 41.* Mrs. Johnson, Christie, near Delancey-street, was attacked so severely with the cholera morbus, that she was thrown into spasms. The prescriptions of her physician only aggravated her disease. When we were called to her, she appeared nearly gone. The medicine which we gave her afforded immediate relief, and in a short time she recovered. She states, that she could not have survived but a short time without the relief afforded her.

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*Case 42.* Mrs. P., residing in Chestnut-street, between Madison and Oak, was seized so violently with the cholera morbus, that her cries could be heard over the house. The second dose of medicine removed the pain; the next day she was nearly well.

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### *Summer Complaint—(Diarrhœa.)*

*Case 43.* The child of Mrs. Johnson, the lady mentioned above, was so far reduced with the summer complaint, that he was given up by two or three physicians. His flesh was nearly consumed, was exceedingly bloated, with every symptom of the consumption. When requested to attend the child, we at first declined, considering it be-

yond the reach of medicine ; but, supposing we might at least afford some relief, we commenced, and the child gradually grew better, and finally became entirely well.

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*Case 44.* A child in Gouverneur-street, near Cherry, from Long Island, had become very much reduced by the diarrhœa, or summer complaint. All means employed had been unavailing. They then applied at the infirmary, and the child was soon cured.

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*Case 45.* Miss Steward, of Greenwich village, had been afflicted with the diarrhœa and dysentery for more than a year. During part of this time, she had been attended by physicians who tried various experiments, but could not cure her. She had become very much emaciated, strength and appetite gone, attended with dropsy, fever, &c. It was in this condition we first saw her, and commenced the use of our medicine ; and after a few months, she was restored to health.

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*Case 46.* The child of Mrs. Trembly was severely afflicted with the summer complaint, or diarrhœa, and was given up as incurable. Our usual course of treatment removed the disease, and the child now enjoys good health.

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### *Bilious Colic.*

*Case 47.* A young man in Chrystie-street was so violently seized with the bilious colic, that he became delirious, and was thrown into spasms. A physician had bled and blistered him, to no purpose. We were called to visit him, and administered medicine, which afforded almost immediate relief. As hopeless as this case was considered by all who saw him, he survived.

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*Case 48.* One of the workmen of Mr. Bundy, in Division-street, head of Market, was taken so severely with the *painter's colic*, that he became senseless, and was conveyed to his boarding-house in a carriage. It was supposed by all who saw him, that he was in a dying state. We commenced the most active treatment, which was kept up for several hours, until signs of life returned. Notwithstanding the hopeless condition in which we found this man, the means made use of restored him to health.

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*Case 49.* Another of the above-named workmen was taken with the same complaint ; great constipation of the bowels, severe pain, vomiting, &c. The usual treatment soon cured him.

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*Case 50.* Mr. B., in Elizabeth-street, was seized violently with the bilious colic. When we were called to attend him, we found him in the greatest agony ; his pain was so great, that he was occasionally insane. Our prescriptions cured him in a few days.

*Scrofula, or King's Evil.*

To the Editor of the New-York Enquirer.

*Case 51.* As you are always disposed to make known every thing calculated to benefit society, I have concluded to send you a brief statement of a cure recently performed on myself.

On the 2d of September, 1827, I was attacked with a severe pain and swelling on the side of my head and neck. It increased until supuration took place, and was attended with the most excruciating torture. I was examined and attended by a number of physicians, in all not less than seven; among whom was Dr. Mott. I was bled, cupped and salivated, likewise lanced fourteen times, and had several hundred poultices applied. Under this treatment, I was constantly becoming more and more reduced, and my complaint growing worse every day. The opening or cavity of the disease extended from the crown of the head down to the temple, and from thence back of the ear down to the windpipe. So reduced had I become, that I was unable to take food for several days together. My throat and neck were exceedingly swollen. One of the physicians who was subsequently called, laid aside the poultices, kept the part wet with rum, and gave me in a short time a pound of salts, and introduced a ligature from one opening of the abscess to the other. Under this treatment, I was rapidly declining. My head became immovable, my appetite was gone, and very little prospect entertained of my recovery. At this critical period, I was advised by a friend to apply to an institution recently established at No. 95 Eldridge-street, called United States infirmary, where I was informed that a successful course of practice was pursued, and the remedies chiefly derived from the productions of our own country. I therefore sent for the superintendent, who came to visit me, and pronounced my disease the scrofula, or king's evil, and commenced altogether a different course of treatment, under which I began rapidly to improve. The pain soon subsided, the ulcers assumed a healthy appearance, my general health gradually recovered, and in less than two months a perfect cure was effected. Since I have been cured, I have done the duty of a fireman, and been completely drenched with water, without the least injury or return of my former symptoms. From the evidence I have of the practice and principles of this institution, I entertain the most favourable opinion of its merits, and I believe it to be the best of the kind in this country. Founded as it principally is upon the botanical system, the remedial course pursued must, in my humble opinion, be far more congenial to our inhabitants than that usually adopted by physicians and surgeons of the present day. Mercury, the lancet and the knife, are now chiefly relied on for the removal of most diseases incident to the human body. To discuss upon the merits or demerits of such treatment, would be unnecessary. Every candid and discerning mind will at once admit that the most dangerous consequences have often resulted from the above course, and a substitute for such practice must constitute a glorious era in the annals of medical science. It is high time that the



eyes of the public should be awakened, and a more careful examination made into the medical productions of our own climate. I therefore cheerfully recommend this institution, and sincerely hope and trust that it may receive that patronage and support which it so richly deserves.

Yours, respectfully,

JOHN J. MURDOCK.

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*Case 52.* The child of Mr. Barnes, Pearl-street, was afflicted for a length of time with the king's evil, or scrofula, and had been attended by several physicians, without any benefit. After a few months, we effected a cure, and the child has remained well ever since.

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*Case 53.* The child of Mrs. R., residence not known, was afflicted with a scrofulous swelling under the chin, which was cured in about two months after we commenced.

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*Case 54.* The child of Mr. Reed, Harman-street, below Clinton, was attacked with an enormous scrofulous swelling under the chin. It was exceedingly swollen, and very hard. One physician who attended, being unable to afford relief, abandoned the case. We were called to prescribe for the child, soon cured it, and it has remained well for several years, having seen the child a few days since.

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*Case 55.* The daughter of Mr. Richard Hunt, now Mrs. Underhill, was afflicted with the scrofula for a number of years. She had applied to a number of physicians, without receiving any benefit. We were called to the case, treated it, and effected a perfect cure.

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*Case 56.* The daughter of Mr. J. W. Robinson was taken with a scrofulous swelling in the glands of the neck. Our treatment cured her, and she has been well for two years.

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*Case 57.* Mr. ———, the foreman of Mr. St. John, merchant tailor, Greenwich-street, was for a long time afflicted with the king's evil, or scrofula. He had employed two physicians for a length of time, without receiving any benefit. Our usual course of treatment restored him to perfect health.

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*Case 58.* The child of Mr. William P. Morris, formerly auctioneer, was afflicted with several large scrofulous tumours in the neck. Our treatment and prescriptions cured him. It has remained well ever since.

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*Case 59.* The child of Mr. A. T. Morris, then residing in Church-street, below Canal, was afflicted with a scrofulous ulcer in the neck, which we also cured after a few months.

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*Case 60.* Mr. R., a cartman, applied at the infirmary,—was afflicted with an enormous swelling or tumour upon the neck and jaw,

which seemed impossible ever to remove. In the course of some time, however, we succeeded in curing it.

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*Case 61.* George, a coloured man, from Trenton, was attacked with an enormous swelling or tumour on his neck, as large as a child's head. Four physicians were called, who pronounced it incurable. After poulticing it, it suppurated, and discharged through fifteen different openings. After persevering for a length of time, this disease was also perfectly cured.

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*St. Vitus' Dance—(Chorea Sancti Viti.)*

*Case 62.* About six months ago, a woman applied at the infirmary, with a remarkable case of St. Vitus' dance. Her limbs were thrown in various directions, having no control over them; loss of appetite, debility and excessive pain attending it. She consulted five physicians, who were unable to tell what the complaint was, much less to cure it. The treatment which we pursued had a salutary effect; and, after a short period, restored her to perfect health.

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*Case 63.* About this time, George, a boy about fifteen years old, came to the infirmary, afflicted with the same disease; his left leg and arm he was unable to control. They were kept in constant motion. The same treatment which was pursued for the woman above mentioned, cured this lad.

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*Asthma.*

*Case 64.* We were sent for to see a young woman in Allen-street, two doors from the church, who was said to be dying with the asthma. When we arrived, we found her almost gone, being nearly suffocated. Two physicians had prescribed tartar emetic, &c. without any effect. We administered a decoction of lobelia, which relieved her in fifteen or twenty minutes, and she soon recovered.

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*Case 65.* Mr. Walden was severely attacked with the asthma. The medicines given soon afforded relief.

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*Croup.*

*Case 66.* A child in Elizabeth-street, above Grand, was thought to be dying of the croup. We administered medicines, which afforded immediate relief, and soon effected a cure.

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*Case 67.* A child of Mrs. Welsh, in Norfolk-street, was suddenly

attacked with the croup. When we were called upon, the child's life was despaired of; but by prompt treatment it was immediately relieved, and soon restored to perfect health.

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*Case 68.* The child of Mrs. N., Mulberry-street, near Houston, was seized so suddenly with the croup, that his life was despaired of. Our prescriptions soon relieved it, and eventually cured it.

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### *Dropsy.*

*Case 69.* Mr. B., near the Battery, had been afflicted with dropsy in the chest for many years. He could find none that understood his complaint, or could cure it. He applied at the infirmary, received our prescriptions, and entirely recovered his health.

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*Case 70.* Mrs. Caswell had been confined to her bed for several months, with an enormous dropsical swelling of the abdomen. She was reduced so low by the disease, that her life was despaired of. Under our treatment she grew better, until she finally recovered.

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*Case 71.* Mrs. R., Rivington-street, had been afflicted for several months with dropsy in the chest, which confined her to her bed. Our treatment restored her to health.

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*Case 72.* Mr. L. had a dropsy of the chest for a length of time; he could find no relief. Our medicine cured him in a few weeks.

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*Case 73.* Mrs. Cook, then residing in Essex-street, was taken with the inflammatory rheumatism. Her physicians bled, blistered and salivated her, until her constitution was almost ruined. She then applied to the infirmary, when she exhibited the following symptoms: extreme debility, which confined her to her bed; cough, which appeared to be seated on her lungs; dropsy in the chest; loss of appetite; wasting of the system, &c. It was thought by her friends that she could not survive but a short time. The treatment pursued effected a change in her system, removed the symptoms, and, as far as we know, she is now enjoying good health.

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### *Fluor Albus.*

*Case 74.* Mrs. C., Stanton-street, had been afflicted with the fluor albus, periodically, for six years; had tried various physicians, without any benefit. One of the physicians of the infirmary cured this woman in a few weeks; she now enjoys good health.

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*Case 75.* Mrs. T., of Rivington-street, had been afflicted with menorrhagia, or profuse flow of the catamenia, for a number of months,

and had tried various prescriptions, without material benefit. She was attended by a physician from the infirmary, and in six weeks she was so far recovered as to be able to attend to her work.

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*Case 76.* Mrs. L., of Elizabeth-street, had been afflicted and confined to her bed for many years with (menorrhagia) copious discharges of blood, excessive debility, emaciation, &c. She could find no relief from ordinary treatment. Our treatment arrested the disease, and she is now perfectly well.

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### *Cough.*

*Case 77.* Mrs. Fry, Eldridge-street, was afflicted with a cough so severe, that doubts were entertained of her recovery. Our treatment restored her to health.

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*Case 78.* Mr. W. Letson introduced a man to us from South America, apparently near his end, from consumption, hectic fever, incessant cough, copious expectoration of matter, continual wasting away of the whole body. From the symptoms, it appeared that he could not survive many months. We commenced our treatment with great reluctance, but, contrary to the expectation of every one, the medicine arrested the disease, and restored him to health.

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*Case 79.* Miss Montross, from Peekskill, N. Y., had been afflicted with cough for a long time. Her physicians pronounced her disease the consumption, and said she could not survive but a few months. She applied at the infirmary, and in a few months she was cured.

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*Case 80.* Mrs. Miller, Norfolk-street, near Delancey, had been afflicted with a cough for some time, and was evidently in a decline. Her flesh was fast wasting away, countenance pallid, night sweats and hectic fever. She was scarcely able to walk across the room. Our treatment and prescriptions performed a perfect cure, and she now enjoys remarkably good health.

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*Case 81.* Mr. Jennings, from Hartford, Conn., was afflicted with cough, spitting of blood, and all the symptoms of consumption. He could find no relief until he applied at our infirmary, and soon after was enabled by the treatment he received to return to his business.

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*Case 82.* Captain L., from Sag Harbour, L. I., had an affection of the lungs for some years, spitting of blood, great weakness, &c. Since using our medicine, the symptoms have subsided, and he now enjoys tolerably good health.

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*Case 83.* Mrs. L. was so severely afflicted with a cough, that no hopes were entertained of her recovery. Our treatment entirely cured her.



*Syphilis, &c.*

*Case 84.* Mrs. Bloomfield, then residing in Robinson-street, was afflicted with a syphilitic disease for years; had large ulcers in the mouth and cheeks. She applied to a Dr. L., who professed to be a cancer doctor. He applied a plaster, said to be composed of arsenic, which produced the most exquisite pain, and separated several pieces of the bones, but only aggravated the disease. Our treatment soon healed up the ulcers, and she has remained well for three years.

*Case 85.* A person from Long Island had the same complaint for many years. A large hole was eaten through the roof of the mouth. Our treatment cured it in a few months.

*Case 86.* A young man, name not taken, had his whole system contaminated with the syphilitic poison; from the hip to the knee, he was covered with ulcers. Our treatment soon arrested the progress of the disease, and in six months healed up every ulcer; and he now enjoys good health. The scars cover a considerable portion of his body.

*Case 87.* C., a young man, was brought from the country, a cripple, and nearly ruined by the same disease. Part of his body was nearly a mass of corruption, and his physicians had pronounced him incurable. After using our medicine a while, he was enabled to walk, his ulcers healed up, and he has now returned home well.

*Case 88.* A lawyer of this city had been for years afflicted with the same disease; had applied to various physicians in vain. After using our medicine for a few months, he regained his health.

*Case 89.* A Mr. Summers was nearly gone with the same disease; had been under the treatment of Drs. C. and W. for a length of time; but was constantly growing worse. In six weeks after we commenced with him, he was enabled to return to his business, cured.

*Ulcers.*

*Case 90.* Mr. Cox, near New-Brunswick, was run over by a wagon; had his leg so injured that a Dr. T. decided that he could never recover until a portion of the bone was removed. He was unable to walk for a length of time, and was extremely reduced. After submitting to our treatment for a few months he was cured.

*From the Evening Journal.*

*Case 91. Messrs. Editors*—I feel it my duty to make known to you, what I deem to be one of the most remarkable cures performed either in Europe or America. In 1825, I was injured in one of my legs with an anchor. I was attended by a physician of this city for eight

months, without any benefit. I then went to England, and was there attended by a surgeon, without receiving any benefit. From thence I went to Ireland, and there was treated by several physicians, with no better effect. From thence I returned to America, and placed myself under the care of a physician, who, in consultation with another, pronounced my leg incurable, and decided that it must be amputated.

At this time, the leg, from the knee downward to the ankle, was in a complete state of ulceration, with callous and swelling, which confined me one year and a half to the house; and so low was I reduced, that it was expected that I never should recover. In this deplorable condition, almost in despair, I was recommended to apply to an institution in Eldridge-street, called the United States infirmary, when one of the physicians came to see me, and commenced altogether a different course of treatment, under which I soon began to grow better. The ulcers assumed a healthy appearance, my health improved, and I can now use my leg and attend to my business as well as ever.

The whole thirty-eight ulcers, which rendered my leg almost a mass of corruption, are perfectly healed. In justice to the physician of this institution, as well as the good of the public, I deem it my duty to make this remarkable and unprecedented cure as extensively known as possible.

RICHARD B. MILLWOOD.

*Case 92.* Mr. —, an Italian singer in the Park Theatre, had been reduced very low by an ulcer upon the shoulder and throat, attended with cough, emaciation, &c. He had applied to Dr. S—, and others of this city, but could get no relief. In about two months we succeeded in effecting a perfect cure.

*Case 93.* A son of Mrs. Fraser, Batavia-street, a few doors from Roosevelt-street, had an ulcer upon the leg of long standing; tried various means without any benefit. His physicians, we believe, decided that it must be amputated. We attended him for a period, and effected a cure.

*Case 94.* Mr. Van Name, from Staten Island, had been afflicted many years with ulcers upon his leg from the knee to the ankle. The bone was extensively diseased: he had applied to four or five physicians; among the number was Dr. M—. He was told that it must be amputated. He applied at the infirmary, and submitted to our treatment. Our applications removed the inflammation, and so much loosened the diseased bones, that a considerable portion of them we extracted. He now walks as well as ever, and, as far as we know, the ulcers have healed.

### *Inflammation.*

*Case 95.* Mr. Cameyer, morocco dresser, Ferry-street, was injured above the knee by a nail. The inflammation and pain were very great;

the swelling of the whole leg was three times as large as the other, and threatened soon to put an end to life. Under the treatment of Dr. H——, who applied blisters, he rapidly grew worse. After being called to him, we commenced with the most prompt and energetic treatment; the pain, inflammation, swelling, &c., subsided, and he finally recovered.

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*Case 96.* The daughter of Mr. Joseph Smith, Peck-slip, a few doors from Pearl-street, had an inflammation and ulcer on one of her legs, which rendered her a cripple, and unable to walk for months and years. She had tried various physicians to no purpose; among the number was Drs. M—— and S——. She was also taken to the celebrated Dr. Sweet, of R. I., but none could benefit her. She was placed under our hands, and her disease soon began to grow better. Her ulcers are now healed, her crutches are thrown aside, and she walks even without limping. It had been decided that his leg must be amputated.

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*Case 97.* The daughter of Mr. Ross, Dominick-street, was attacked with inflammation and ulcers on the knee and leg, the whole of which was a mass of corruption. The joints of the knee were displaced, and the fingers could be introduced under the sinews. She had been attended by the late Dr. Wright Post and others, without any benefit. Although this case was so hopeless, we succeeded in effecting a cure.

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*Case 98.* Mrs. B., Spring-street, had her thigh fractured, but her physician not knowing how to treat it, suffered the bones to remain separated for two or three inches. Great pain and swelling was the consequence, which confined her to her bed for several months. We were enabled to reduce the swelling and inflammation; and after a period she was able to walk, and is now well.

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*Case 99.* John Gamble, a boy aged about twelve years, then residing in Spruce-street, was run over by an engine, which exceedingly bruised and injured his leg. Under the treatment of the physician who attended him, he was constantly growing worse. His leg was exceedingly inflamed and swollen, and very much lacerated. Our applications soon separated large portions of dead or mortified flesh, when the wounds healed, and he recovered.

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### *Wounds and Contusions.*

*Case 100.* Mr. Hosier, Fifth-street, near Lewis, received a wound upon the hand, by an instrument of several tons weight, which crushed the fingers, hand, &c. He was advised to have it amputated immediately; but our treatment healed the wound, and he has now the use of his hand, no part lost except the thumb. The physician who had previously advised that the hand must be cut off, expressed his astonishment at the cure.

*Case 101.* The foreman of Mr. Nicholls, Mulberry-street, near Hous-  
toun, received the weight of a large stone upon his hand, which crush-  
ed it, and broke several of the fingers ; at first sight it seemed almost  
impossible to cure without amputation, but by reducing the inflamma-  
tion, separating the dead flesh, and keeping the fractured bones in con-  
tact, the hand was cured, and he has now the use of it as well as ever.

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The following cases were treated by one of the students connected  
with the infirmary.

*Inflammation of the Lungs.—(Pneumonia.)*

*Case 102.* A person was attacked with pneumonia ; a severe inflam-  
mation of the lungs, excessive cough, violent fever, and great pros-  
tration of strength. By the treatment pursued, he recovered without  
bleeding, or any of the ordinary medicines.

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*Bilious Colic.*

*Case 103.* Application was made at the infirmary to see a person  
very low with the bilious colic and inflammation of the bowels, who was  
previously attended by one or more physicians without any effect, but  
constantly growing worse. The treatment succeeded in arresting  
the disease and effecting a cure.

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*Case 104.* Another person was attacked with severe inflammation  
of the stomach and bowels, which reduced him very low, and his case  
was considered extremely dangerous. The treatment removed the  
symptoms and effected a cure.

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*Case 105.* Mr. N. had a severe attack of the chronic dysentery,  
which lasted two or three years, attended with severe cough and other  
dangerous symptoms. The remedies made use of restored him to  
health.

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*Case 106.* Several hundred females applied at the infirmary, at dif-  
ferent periods, who had been in a delicate state of health for years.  
The treatment pursued restored them to health.

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*From the Evening Journal.*

*Case 107. Mr. Editor,*—I wish to communicate, through the medium  
of your columns, the following case, for the benefit of the afflicted :

About two years and a half since, I cut my knee with a broadaxe.  
The wound was only seven-eighths of an inch in length, and not very



deep. I applied for surgical aid, and was visited by Dr. Peter Renton, of Concord, New-Hampshire. He closed the wound by sewing it up, and then commenced blistering and poulticing. In two weeks time my knee was considered dangerous, and the third week he amputated it from my thigh, leaving a stump six inches long; four days afterwards he sawed off four inches more of the thigh bone. It did not heal, but pained me very much. Six months after, I called on Dr. W. Beach, 95 Eldridge-street, New-York, who gave me medicine which afforded immediate relief; but, living at a great distance from him, I could not obtain any more, and my stump continued to bleed and discharge for two years, during which period I was compelled to lie entirely upon my back, or sit upon a cushion. I consulted, during this period, some of the most able surgeons in the United States, (so considered,) but no one could afford me any relief, or discover the cause of the ulcer. Some said the bone was exfoliating; others decided that my thigh must be amputated again for the third time; but eventually, I called on Dr. W. Beach the second time, in April, 1831, and he again prescribed for me. I followed his directions, and in three weeks my leg healed. His applications removed a piece of the bone which had been the great source of irritation for two years. My opinion is, that if Dr. B. had been my surgeon when I first received my wound, my thigh would not have been amputated. This communication is not published at the request or instigation of any one, but of my own free will, for the benefit of suffering humanity; and the undersigned hereby solicits other editors to publish the same, as testimony in favour of the practice and skill of Dr. W. Beach.

New-York, July 12, 1831.

SAMUEL PARKER.

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*Case 108.* We were called to see a man, on Long-Island, who had received a wound in the knee, by a sithe, which let out the joint-water. His physician was unable to cure it. The medicine which we applied healed the wound, and he is now well.

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*Case 109.* Mr. Rhinehart, Suffolk-street, a few doors below Stanton, received a wound from a stone, on the frontal bone, that depressed a large portion of the skull, to the distance of half an inch, which rendered him senseless, produced fits, &c. Contrary to the expectations of every one, we succeeded in curing him; and that, too, without trepanning; which, no doubt, would have been done by any other surgeon in the city.

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*Case 110.* A man, in Cherry-street fell thirteen feet backwards, and struck his head upon a stone, in the area; the bleeding was profuse; delirium followed. He recovered without trepanning.

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#### *Aneurism.*

*Case 111.* A coloured woman, by the name of Grant, in Reed-street, opposite Manhattan water-works, was seized with an enormous swell-

ing in the leg, which was nearly as large as a person's head, attended with pulsation and the most excruciating pain. Dr. Mott decided that she must die, except the operation be performed of tying the artery. Dr. Marshall stated, that nothing would save her life but amputating the thigh. Our opinion was directly the reverse. We believed, that the course proposed would prove fatal : and we adopted means to subdue the inflammation, lessen the irritation, &c., and the consequence was, that all her symptoms subsided, she recovered, and has been well for several years. Dr. M. was so disappointed at her unexpected recovery, that one year after he deputed persons to wait upon the woman to know what means were made use of to effect a cure.

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### *Felon.*

*Case 112.* William Harris, Eldridge-street, opposite the U. S. infirmary, was taken with so severe a felon upon the finger, that in a short time he lost fifty pounds weight of flesh. His physician could render him no service. We extracted large pieces of dead flesh, and a large portion of bone ; when it healed.

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*Case 113.* Mrs. Morrison, Frankfort-street, near Chatham, had a felon, which commenced upon the thumb, was exceedingly inflamed, swelled and painful. Our applications removed the symptoms ; a large portion of bone was extracted, and it soon became well.

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*Case 114.* Miss L., a young lady, was also afflicted with a felon on the finger, which produced great pain, swelling, &c. After subduing the inflammation, extracting a portion of bone, &c., it healed up.

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### *St. Anthony's Fire—(Erysipelas.)*

*Case 115.* A young lady, in Stanton-street, near Lewis, was attacked with an itching, burning and swelling of the face, which increased until she became blind. We were called to see her and prescribed. The medicine, as in similar cases, soon relieved all her symptoms, restored her to her sight, and she is now well.

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*Case 116.* Last winter, we were called near Somerville, N. J., to visit Mrs. Davis, who had been afflicted nearly all her life with erysipelas, or St. Anthony's Fire. Vesicles arose upon the skin, which assumed the appearance of mortification. The remedies made use of arrested the progress of the disease ; and she now, as far as we know, enjoys good health.

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*Case 117.* Mrs. L., then residing in Water-street, near Roosevelt, was seized with a very severe attack of St. Anthony's Fire, on the lower extremities : itching, burning and swelling, were very great, and it finally terminated in gangrene. The applications separated the dead portions of flesh, removed the irritation, and she finally recovered of that disease.

*Ague in the Breast.*

*Case 118.* The wife of the late Seymour Hawley, formerly keeper of the penitentiary, had her whole breast converted into hard indolent tumours and ulcers, from the ague. She had been attended a long time, without receiving any benefit. We were called, commenced our treatment, and after about one year she was cured.

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*Case 119.* The wife of Mr. J.C. Faulkner, in Gold-street, a few doors from Spruce, had been reduced extremely low with the ague in her breast. It became very much swelled, exceedingly hard, and very much inflamed. Dr. S. formerly attended her for a length of time, and under his treatment she constantly grew worse. We were called upon to attend her, and by following our prescriptions, in a few months, she was restored to perfect health.

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*Case 120.* Mrs. L., in Division-street, had been also reduced exceedingly low with the ague in the breast. Under the treatment of her physician she was daily becoming worse, until we commenced with her, when she soon recovered.

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*Case 121.* Mrs. R., in Rivington-street, had her breast ulcerated for a long time, proceeding from the ague. By our treatment she soon recovered.

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*Tumours.*

*Case 122.* Mrs. T. Q. Underhill, then keeping a store in Grand-street arcade, had a tumour on the chin or neck, which a surgeon said, could not be cured without extraction with the knife. We cured it by the application of medicine alone.

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*Case 123.* The wife of A. G. Boggs had been afflicted several years with a large tumour in the breast. Our treatment removed it.

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*Case 124.* Miss Tilton, a young lady from Shrewsbury, was afflicted with a large tumour in one of her breasts. She was told that it could never be cured without a surgical operation. We, however, have succeeded in entirely removing it without the knife, and she has returned home well.

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*Case 125.* Mr. R. had a large wen on the side of his face, which excited the curiosity of persons in passing the streets. We made use of an application which produced a discharge, and entirely removed it, with little or no pain.

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*Case 126.* A person called at the infirmary, the other day, (name not taken,) with a tumour under the chin, which he had for twenty years. He applied to a surgeon, who stated, that it must be extracted with the knife. Our treatment entirely removed it, in about two weeks.

*White Swelling.*

*Case 127.* The foreman of Mr. Munson, combmaker, then residing at the corner of Pearl and Beekman-streets, was taken with a swelling and inflammation of the knee, which rendered him a cripple, and entirely confined him to his room; being unable to make the least use of his leg. It suppurated, and the whole knee seemed almost a mass of corruption. The physician who attended him could render him no service. We were called to attend him, and succeeded in curing his disease. He now works, we believe, with Mr. Curtis, combmaker, in the Bowery, opposite Spring-street.

*Case 128.* The daughter of Mrs. Williamson, then residing in Mulberry-street, near Bayard, was afflicted with the white swelling, or hip disease, which rendered her a cripple. The physician, or physicians, who attended her, abandoned the case as hopeless; after which we were called to attend it: and after one year or more effected a cure. She is now a young woman, walks the streets without crutches, and enjoys excellent health.

*Case 129.* A little girl, aged about ten, then residing No. 20 Orchard-street, was taken with the hip disease, or white swelling, which suppurated and discharged in two places. All previous treatment availed nothing. Our treatment healed up the ulcers and effected a cure, although she will ever walk lame, as the hip was drawn out of joint before we saw it: had we been called in the commencement, this probably would not have happened.

*Case 130.* The son of Mr. Trembly, then residing No. 80 Vandam-street, was taken with the most excruciating pain of the white swelling, or hip disease. The physicians who were first called to it, were of no service. Our applications soon removed the pain, swelling, &c. and although ulceration took place, the boy can now walk without crutches, and is well.

*Salt Rheum, Tetter, Herpes, &c.*

*Case 131.* S. A. the daughter of Mr. Lattirett, Gold-street, was afflicted for a length of time with the salt rheum, itching, burning and scaly eruptions of the hands. The means we used to cure the disease, proved effectual.

*Case 132.* The daughter of Mrs. G. had also been afflicted with salt rheum on her hands for a length of time. We gave her such medicine as entirely removed the complaint.

*Case 133.* The daughter of Mr. Smith, of Smith-town, L. I., was so severely afflicted with this disease, that her whole body was covered with scaly eruptions; had tried many physicians and many prescriptions without any benefit. She came to this city and placed herself



under our care ; although it required one year, we cured the disease, and she is now entirely free from every vestige of the complaint.

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*Case 134.* A woman, in Forsyth-street, near Broome, was so severely afflicted with salt rheum, that her hands and body were nearly covered with it, and had it for many years ; tried fifty or a hundred remedies, but nothing afforded relief until she tried our medicine, which mitigated her symptoms in a short time, and, as far as we know, she is now well.

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*Case 135.* Mr. Stephen G. was severely afflicted with an eruption, itching, burning, &c. of the feet. Nothing afforded him any relief until he used our medicines, which soon cured him.

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*Case 136.* Mrs. Lober, in Pearl-street, near Frankfort, was so severely afflicted with salt rheum, that her whole body was almost in running ulcers, attended with the most painful sensations. She was cured in about two weeks.

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*Rupture—(Hernia.)*

*Case 137.* Mr. F., corner of Eldridge and Broome, had his life endangered by an irreducible or incarcerated rupture. We were enabled to return the contents of the hernial sac without an operation, which is almost invariably resorted to by surgeons of the present day, and which often destroys the patient in a short time.

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*Case 138.* Mr. L., in Forsyth-street, was reduced to the same dangerous state, and the same means cured him.

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*Case 139.* Another person, name not recollected, had been afflicted for many years with a hernial rupture. By great exertion it had become irreducible, and placed his life in the greatest jeopardy. The same means soon returned the contents of the hernial sac.

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*Hydro-Sarcocele.*

*Case 140.* Mr. Heyde, living in Centre-street, near the gas-house, had been afflicted for years, with an enormous dropsical and callous swelling. He applied to Dr. M., who intimated that the whole disease must be laid open, and the most formidable operation be submitted to. He applied to other physicians, who considered his case so desperate that they were afraid to treat it. Another surgeon decided that the operation of castration must be performed to effect a cure. He applied at our institution, and submitted to our treatment. We first drew off thirty-six ounces of fluid ; afterwards took measures to reduce the swelling, and he is now perfectly well, and attends to his ordinary business, being a cooper by trade.

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*Case 141.* Mr. L., a painter by trade, then residing in Elizabeth-street, between Spring and Broome, was afflicted for a length of time with the same disease ; the parts were exceedingly hard, and had

ulcerated in several places. A physician attended him for two or three months without any benefit, and then decided that he must be castrated. In this hopeless condition he applied at our infirmary, and is now a sound man.

*Case 142.* A person, name not recollected, in a similar condition, made application at the infirmary, was treated in a similar manner, and cured.

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#### *Cancer.*

*Case 143.* Mr. McBride, cartman, had a cancer upon his breast for many years; could find no remedy. Applications were applied to it which extracted it in a few weeks, and has been well for many years.

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*Case 144.* Mrs. R. P., residing in Bayard-street, near the Bowery, had a cancer on the temple. The same treatment removed it, and she has also been well for many years.

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*Case 145.* John Tucker, of Brookhaven, Long Island, had a disease upon his tongue, which increased until a hole was eaten nearly through it, producing a large ulcer, and rapidly extending. He applied to Dr. Mott of this city, Dr. Stevens, and in all thirteen physicians, who all decided that it was a cancer, and must be extirpated with the knife, or the tongue cut off. Under these discouraging circumstances, he applied at the infirmary, and so hopeless was the case, that we had little prospect of his recovery; but our applications had a much more favourable effect than we anticipated, and after a few weeks removed every vestige of the disease.

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*Case 146.* Captain Conklin, corner of Pearl-street and Front, lumber merchant, Brooklyn, had an ulcer upon the face, which was pronounced a cancer by a physician of this city. Our applications removed it, and he has now been well for several years.

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#### *Venereal Disease.*

*Case 147.* William Graham, Forsyth-street, applied at the infirmary, affected with the venereal disease, of seven years' standing. The symptoms were general emaciation and debility; part of the time hectic fever. The disease had contaminated the whole system, and had nearly ruined the constitution. Ulcers of a very virulent and irritable character existed in various parts of the body; copious discharges of fetid matter, and all the ordinary symptoms of the worst species of lues venerea. He had applied to numerous physicians without benefit. Most of the medicine he received from all, was mercury in some form or another, which caused the mercurial rheumatism. The treatment pursued under the head of venereal disease, after some length of time, effected a cure.

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#### *Necrosis.*

*Case 148.* George Hewlet applied at the infirmary, afflicted with an ulcer below the hip-joint. It extended to the bone, which also be-

came affected. It commenced with ordinary inflammation, being attended with very excruciating pains for a length of time ; and it finally suppurated, and continued to discharge a large quantity of matter for the space of three years. The physicians to whom he applied could afford him no relief. The course pursued at the infirmary separated the diseased bone, and he has now been well about two years.

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*Case 149.* Mr. Henry Lewis, from Columbia county, state of New-York, was attacked with an inflammation of the leg, which, after continuing for some length of time, suppurated, and discharged large quantities of sanious matter, or pus. There were numerous sinous openings in the leg, extending to the bone, causing a decay of it. Most of the tibia, or front-bone, was rotten, or in a state of decay. We applied medicines to open the sinuses, and to make one common communication, one with the other ; after which the applications were used to separate the diseased portion of the bone, when, after about six months from the time we commenced, it healed up. A number of pieces of bone were extracted. A surgeon of this city, Dr. M——, proposed an operation, by the knife.

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#### *Necrosis—Venereal Disease.*

*Case 150.* A woman, aged about thirty years, applied for assistance, at the infirmary, with the whole fluids completely contaminated with the venereal poison. One or more openings had been made through the skull, by the effect of the complaint. The lower jaw-bone was carious from one angle to the other. Numerous sinuses or openings to the bone. It had been many years standing, and could not be cured by the various medicines which she had used. Medicines were given internally, to eradicate the taint of the system, and such applied externally, as separated the diseased bone, which, together with a little manual effort, after a period of about six months, removed the whole maxillary, or jaw-bone. Osseous matter had previously been deposited about the alveolar processes, by which the teeth still were retained. It began rapidly to heal, and when we last saw her, it was nearly closed up ; and, as far as we know, she is now well. The jaw-bone, after extraction, appeared very much diseased, but still retained considerable firmness and strength.

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#### *Bilious Remittent Fever.*

*Case 151.* Mr. R——, Delancey-street, was attacked with a bilious remittent fever ; great prostration of strength ; tongue coated ; nausea ; severe headach ; great degree of heat through the whole system ; little or no remission of symptoms, together with the ordinary characters of bilious remittent. The treatment pursued soon arrested the fever, and he daily grew better, till his health was completely established. The rapidity with which he amended, was the subject of remark by all his friends.

*Consumption—Phthisis Pulmonalis.*)

*Case 152.* Mrs. Miller, aged about thirty years, residing in Suffolk-street, was taken with a severe cold, which lasted for six or nine months. After the inflammation subsided, suppuration followed. She expectorated, or raised large quantities of thick matter or pus, which continued during most of the time of the complaint; more or less pain in the chest; night sweats; continued to waste away, until most of her flesh was gone; countenance pale; cough excessive; great debility, and every symptom of approaching dissolution.

Soon after she commenced taking the medicines, a mitigation of all the symptoms followed, and in the course of three or four months, she was perfectly well, and has remained so ever since. We have named the disease the consumption. Some may prefer to give it another name; but names, being arbitrary, will not alter the complexion of the disease.

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*Case 153.* Mrs. Griffin, a relative of the lady above mentioned, was afflicted in a similar manner, though the symptoms were not so violent. Cough, wasting of the system, hectic fever, expectoration of matter, great debility.

A similar course of treatment restored her to health in two or three months.

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*Venereal Disease.*

*Case 154.* Mr. Farmer, grocer, of this city, residing in Broome-street, in company with some others, employed some of the Oneida Indians, to sail to Europe, for the purpose of exhibiting the war dance and some other Indian customs or practices. One of the company, named Samuel, on his arrival here, was found to be in a deplorable condition, with secondary symptoms of the syphilis, or venereal disease. It had extended throughout the whole system, with deep seated and most extensive ulcers, which emitted such a fetid smell, that it rendered it almost impossible to dress them. It was with great difficulty that he could walk. This man began to recover from the day the medicine was administered to him, and in the course of three weeks he was perfectly cured.

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*Chronic Inflammation of the Kidneys.*

*Case 155.* Mrs. Sturges, from Lansingburgh, in this state, applied at the infirmary, with the chronic inflammation of the kidneys. Symptoms—constant pain in the small of the back, which had been for years; urine very turbid, and unequal in quantity, in connexion with rheumatic pains; great debility; indigestion; fever; irritability of the nervous system. She had been treated by steam doctors, and physicians of the old school, with little or no benefit. She continued for some months in the city, during which time she daily grew better; and, as far as we know, is now well.



*Scrofula.*

*Case 156.* Joseph Denton, then residing in the city of New-York, now in Brookhaven, Long Island, was attacked with a scrofulous tumour upon the neck. It increased, and finally suppurated, leaving an obstinate scrofulous ulcer. He could find no relief till he submitted to our treatment; when the tumour began to subside, the discharge to lessen and become healthy; and the ulcer healed in about three months from the commencement. He has been well for a number of years.

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*Case 157.* The child of Mr. W. Morris, then auctioneer, in this city, had the scrofula for a length of time. The neck was inflamed; great heat, pain, and finally ulceration took place. It assumed a very formidable character. The treatment pursued at the infirmary effected a radical cure.

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*White Swelling.*

*Case 158.* A child, about six years of age, was attacked with a white swelling, which caused the most intolerable pain. The knee and hip were excessively swelled, and the child confined to his bed; and he was rapidly wasting away. The physician who attended him was unable to afford the least relief. He was placed under the care of one of our students, who soon succeeded in mitigating the pain, reducing the swelling, and thus preventing suppuration. His health was so impaired, that he was unable to sleep for nights in succession. The course pursued removed the complaint. He was subsequently attacked in the other leg, in the same manner, and the same course of treatment removed it.

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*Case 159.* Joseph Denton, the person before mentioned, was seized with a severe pain in the knee, followed by great swelling and inflammation, which prevented him from labour for a great length of time. The disease assumed such a character, that it was feared that it would be necessary to resort to amputation. The usual remedies were applied; the symptoms abated, and in the course of two months he recovered.

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*Dyspepsia.*

*Case 160.* Mr. Conklin Davis, of Brookhaven, Long Island, was afflicted with the dyspepsia, for a number of years. Stomach and liver diseased; great debility; food not digested. The whole system became much impaired, and continually getting worse. He could find no relief from physicians, or any other source, until he applied at the infirmary. The remedies removed the complaint, after some length of time. I have since seen the person, who states, that he enjoys tolerable health.

*Case 161.* Mr. T. Atwater, of Williamsburg, Long Island, was afflicted with indigestion, for a great length of time ; pain and swelling of the stomach, particularly after eating ; general debility, &c. ; disordered state of the bowels. Soon after he applied for relief, he grew better ; and, in a short time, the symptoms subsided.

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*Chronic Dysentery.*

*Case 162.* Mr. S——, of this city, had been labouring under the chronic dysentery, for more than a year. His bowels were constantly in a morbid or unhealthy state. The remedies prescribed for him effected a cure.

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*Fistula.*

*Case 163.* Mr. Washington Lewis, Chatham-square, had been afflicted with a fistula for a great length of time. It commenced with great pain, inflammation and swelling, and finally suppurated, and continued to discharge matter freely for more than a year. It extended up the bowel, or rectum, about two inches ; hard callous edges, &c. A surgeon of this city attempted to extirpate it with the knife, by making extensive incisions. After submitting to the treatment usually pursued in this complaint, it healed up, and he was restored to health.

[For twenty-two other cases of this complaint, see *Fistula*.]

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*Obstinate case of Intermitent Fever.*

*Case 164.* Mr. James Conklin, of this city, was taken with the intermitent fever, in Bushwick, Long Island, where it extensively prevailed. The physicians there gave him large quantities of mercury, salts, bark, &c., without effecting a cure ; the disease had nearly destroyed his health. Dropsy of the whole system succeeded. In this condition he was placed under our care, and we soon prescribed medicines which brought about a healthy state of the system, and he is now well.

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*Dropsy.*

*Case 165.* The same person, Mr. James Conklin, was taken with a dropsy of the whole system : his face became very much bloated, and abdomen enormously swelled, so much so that his clothes could not be buttoned. He was unable to perform any manual labour, and his system was fast sinking, attended also with a troublesome cough. This was brought on by the use of mercury, for the fever and ague, &c. So obstinate was the disease that it was feared he never would recover. After attending, however, to our prescriptions, the water in enormous quantities was discharged, the swelling of the body subsided ; and in a few weeks not a vestige of the disease remained. He has been perfectly well for a length of time.

*Cancer.**From the New-York Evening Post.*

*Case 166.* Mr. Coleman—As you have ever manifested a disposition to publish any fact that might be useful to the afflicted, I take the liberty of requesting you, through the medium of your paper, to make known the following case. About one year ago, I discovered a tumour in my left breast, which gradually increased till it ulcerated. The pain attending it was darting and lancinating, producing sensations similar to needles, or some sharp pointed instruments piercing the flesh. Feeling alarmed at these symptoms, I applied to Dr. Richard Kissam, who pronounced it a cancer, and advised me to submit to an operation. In consequence, however, of hearing, a few days afterwards, that Dr. Beach had been successful in curing this disease without the knife, I relinquished the idea of such an operation, and placed myself under his care. His first application mitigated the pain, and in the space of two months I had the satisfaction of finding myself perfectly well. The gratitude I feel on the occasion, prompts me to make the circumstance thus publicly known, not only in justice to the physician, who was the instrument, in the hands of Providence, of rescuing me from the jaws of death; but also for the benefit of all those who are labouring under this most distressing malady. In contrasting my case with that of a lady from the country, who, a few weeks since, died under an operation for a similar disease, (performed by two surgeons of this city,) I feel emotions of gratitude more easily felt than described—and therefore, out of sympathy for all who are afflicted with cancers, I do most earnestly recommend Dr. Beach's mode of treatment, and request, that in the cause of humanity, other editors will have the goodness to give the above statement a few insertions.

ELIZABETH MICHAELS.

New-York, March 11, 1822.

*Necrosis.*

*Case 167.* Mr. Douglas had been afflicted with a diseased leg, in which the bone had become carious, or diseased, for eighteen months. He could find no benefit from any other source, until he applied at the infirmary; when, by submitting to the treatment prescribed, he was entirely cured.

*Dropsy of the Chest.*

*Case 168.* Mrs. Washburn, residing then in First-street, was seized with pain at the lower portion of the breast-bone; difficulty of breathing; fulness and tightness of the chest; diminution of urine; which was very high-coloured, and all other symptoms of dropsy in the chest. It afflicted her so much, that, for a portion of the time, she was confined to her bed. The medicines which we prescribed, in a few weeks, effected a perfect cure.

*Apoplexy.*

Case 170. Mr. Paul aged about 70, residing in Forsyth street, had been subject to attacks of apoplexy, for considerable time, they increased upon him, until he was seized with one so severely, that the immediate extinction of life was threatened. The physician who was called to him proposed bleeding. We did not bleed him, but used means to equalize the circulation, which gave immediate relief. His senses returned, and strength, he gradually grew better, until he recovered, and has remained so for a great length of time. I have this day seen him and he is as well as ever. Had the usual depletive course been followed, he would in all human probability been now in his grave.

*Fever sore or Ulcer.*

Case 171. Mrs. Paul, Forsyth-street, had been afflicted for many years with a fever sore, with a constant discharge, great swelling and inflammation, &c., the humours from the ulcer often receding, and settling upon some inward organ, and causing great distress. A great number of physicians were applied to in vain, after which we were called to attend her. Our prescriptions were attended with a happy effect, swelling and inflammation subsided; the discharge ceasing, and the ulcer (very extensive) nearly healed.

*Fistula.*

Case 172. Mr. Tomes, wood inspector, residing in Crosby-street, was attacked with a fistula, great pain, inflammation, &c., and all the symptoms of that formidable disease. He was attended by two physicians, who were unable to cure him. After this we were called; our treatment effected a cure without any surgical operation by the knife.

*Debility, Fluor Albus, &c.*

Case 173. Mrs. Miller, Laurens-street, had been a long time afflicted with fluor albus, general debility, &c. She was unable to find relief from any of the prescriptions of her physicians. In the course of a few weeks, by adhering to our prescriptions, she was enabled to resume her ordinary business.

*Chronic Dysentery.*

Case 174. Mr. Rehorn, in Allen-street, had been afflicted with the chronic dysentery for a year, our treatment cured him.

*Chronic inflammation of the Liver.*

Case 175. Mrs. Pessenger, Norfolk-street, had been a long time afflicted with a chronic inflammation of the liver; pain in the side and shoulder, disordered state of the stomach, general debility, &c. She was unable to find relief from physicians, or from any source. After submitting to our treatment for a short time, the symptoms subsided, and as far as we know, the patient is now well.



*Inflammation of the Bowels.*

Case 176. Mr. Taber, 158 Stanton-street, was seized violently with the bilious colic. His physician bled, blistered, and salivated him; all of which only exasperated the complaint. Nothing passed the bowels for days; constant retching and vomiting, excruciating pain, the bowels finally became enormously swelled; he had been in this condition for about ten days, when his life was almost despaired of. Under these discouraging circumstances we were called to treat him. We gave him such physic as soon produced a free evacuation from the bowels, which lessened the swelling, pain, &c., and arrested the disease. From this time he grew better, and recovered in about a week.

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*Intermittent Fever.*

Case 177. Mr. Brewster, residing at the corner of Moore and Water streets, had become very low, and much reduced by intermittent fever. He was at times delirious, and his disease had become so seated, that it was feared he would not survive. In a few weeks our prescriptions cured him.

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*Remittant Fever.*

Case 178. The son of Mrs. Burkhill, then residing in Hester-street, was seized with the remittent fever; great nausea, pain of the head and other parts, pulse quick, skin dry, delirium and great prostration of strength. A vegetable course of treatment soon restored him to health. His life was once before threatened with bleeding from the nose. In an hour our applications suppressed it.

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*Dyspepsia.*

Case 179. The daughter of Mrs. Burkhill, then residing in Park Place, became so low and emaciated with dyspepsia, that her recovery seemed doubtful. Our usual course of treatment gave immediate relief. Her mother now states that she is indebted for her life to our medicines. The ordinary means were used.

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*Piles.*

Case 180. Mrs. Delamater of this city was severely afflicted with the piles. A few prescriptions removed the complaint.

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*Inflammatory Rheumatism.*

Case 181. Mr. Caleb Fordham, Madison-street, was confined to his bed for several months with inflammatory rheumatism, attended with great pain and inflammation of the joints, which prevented him almost from moving the limb. The treatment gradually eradicated the disease from the system, and he now walks and attends to his ordinary business.

*Various Diseases.*

*Case 182.* Five or six different cases occurred in the family of Mr. Gibbs, plane maker, in the Bowery, all of which were speedily cured by a vegetable course of treatment.

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*Remittent Fever.*

*Case 182.* A young man boarding at the house of Mr. Hunt, in Broome-street, was violently seized with remittent fever, pain, &c. He was restored to health in a few days.

Another member of the family was violently afflicted with colic, fever, &c. He also was soon cured.

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*Case 183.* Five or six different diseases were cured in a family of P. Hickock, in Ludlow-street.

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*Case 184.* A number of diseases were cured in the family of Mr. Noah Hanford, Suffolk-street, as usual, without bleeding or mercury.

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*Bilious Colic.*

*Case 185.* Mr. Hadley, 104 Allen-street, was so suddenly and powerfully seized with bilious colic, that his life seemed in imminent danger. Our medicines afforded immediate relief, and in a few days he was well.

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*Scurvy, Swelling, Tetters, &c.*

*Case 186.* The daughter of Mr. Henry, Williamsburgh, Long Island, had been for a long time afflicted with a swelling of the lower lip, which became very much enlarged, the colour changed, and it was attended with very obstinate symptoms. The family physicians and others to whom he applied were unable to cure it. Our medicines effected a cure.

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*Case 187.* A number of desperate diseases were cured in the family of Mr. Newcomb, in Broome-street.

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*Inflammation of the Eye.*

*Case 188.* Mrs. Parcells, Elizabeth-street, was suddenly seized with severe inflammation of the eyes. Our applications soon reduced it.

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*Case 189.* Several inveterate cases occurred in the family of Mr. Charles Sweezey, corner of Grand and Mangin streets, which were cured by the usual course of treatment.

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*Ischuria or suppression of Urine.*

*Case 190.* Mr. John Fleming, 397 Bowery, was seized with an in-

inflammation of the bladder, kidney, &c. Total suppression of urine, swelling over the region of the abdomen, fever and pain so great that delirium succeeded. His life seemed in imminent danger; his attending physician being unable to afford him any relief. After submitting to our treatment, he was relieved in an hour. He continued to mend until he entirely recovered.

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*Pleurisy and Fever.*

*Case 191.* The daughter of Mr. John Fleming, 397 Bowery, was attacked with inflammation of the pleura, great fever, &c. Great pain, and confined to the bed for a great length of time. The usual course was taken to reduce the inflammation, which effected a cure.

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*Pleurisy.*

*Case 192.* The wife of Mr. John Fleming, 397 Bowery, was severely attacked with pleurisy; acute pain in the side, cough, fever, &c. Instead of following the course pursued by ordinary physicians, medicines were given to promote perspiration, fomentations were applied to the side, purgatives were administered which afforded immediate relief, and she was soon cured.

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*Nervous Debility.*

*Case 193.* Mrs. Ludlum, 223 Thompson-street, was reduced very low by nervous debility. The family physician was unable to render her any benefit; our prescriptions cured her.

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*Case 194.* Mr. Porter, 218 Essex-street, had been afflicted with an obstinate disease of the face for a long time, and could find no relief until he used our medicines, which cured him.

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*Dyspepsia, Palpitation, &c.*

*Case 195.* Mrs. Neal, 232 Stanton-street, was taken with a severe palpitation of the heart, which proved very painful and obstinate, the stomach was very much disordered; great emaciation, fever, debility, &c. Two physicians pronounced her case hopeless. Our treatment cured her of this complaint.

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*Case 196.* Several cases occurred in the family of Mr. A. W. Youle, Water-street. All were cured by our treatment.

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*Inflammation of the Eye.*

The wife of Mr. Townsend, Water-street, was taken with inflammation of the eyes, which were cured in a few days.

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*Contusion.*

*Case 198.* Mr. Babbit, corner of Essex and Stanton street, received a severe and dangerous contusion on the side. Without bleeding he recovered.

Case 199. Mrs. Babbit, corner of Essex and Stanton streets, had some anomalous disease. Our prescriptions soon relieved or cured her.

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*Contusion.*

Case 200. Mr. S. Rust, Eldridge-street, fell through the scuttle door from an upper story, and received a severe and dangerous contusion and wound. Our treatment afforded immediate relief, and effected a cure.

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*Liver Disease.*

Case 201. M. Shade, then residing at 631 Water-street, had been for a long time afflicted with a chronic disease of the liver. Our prescriptions soon cured her. Since that time we have also cured her of the bilious colic.

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*Stricture and inflammation of the Bladder, &c.*

Case 202. Mr. Tice, Avenue D, was seized with an inflammation of the bladder, which produced great pain, and total suppression of urine. Our prescriptions soon relieved him.

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*Inflammation of the Bladder, suppression of the Urine, &c.*

Case 203. The wife of Mr. Rayner, 62 Avenue D, was taken with an inflammation of the bladder, which produced a total suppression of urine. Her agony was so great that her cries could be heard in an adjoining apartment. In twenty minutes our treatment afforded relief, returned the water, and in a short time cured her.

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*Fever.*

Case 204. A child of Mr. Raymond, 8 Mangin-street, was seized so bad with a fever, that his life was despaired of. The course we pursued cured it in a short time.

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*Contusion.*

Case 205. Mr. John Newcomb, 343 Third-street, fell from a scaffold in a ship yard, fractured the clavicle, and received a severe contusion of the hip, which prevented him from using it for many weeks; great swelling, pain and inflammation, which confined him to his bed. His family physician was unable to afford him any relief. Our treatment soon cured him.

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*Fracture and Contusion.*

Case 206. Mr. Rider of Fourth-street, fell from a scaffold in a ship yard, fractured the clavicle, and severely bruised his side. One physician attempted to reduce the fracture, and stated that it was properly done. Another was called who stated that it was not reduced: the consequence was that both were dismissed. We were then called and commenced treating it, and he speedily recovered.



*Hip Disease, Ulcer, &c.*

*Case 207.* The son of Mr. Williamson of Williamsburg, Long Island, was attacked with a tumour between the hip and the knee, which was cut out by a surgeon of this city. Ulcerations followed, which appeared to extend to the joint. A large opening or orifice formed about twelve inches long, which penetrated deep into the flesh, and from it was a copious discharge of pus and matter. The joint appeared diseased, which rendered him a cripple for many months. Under the treatment of a number of physicians he constantly grew worse. In this condition we were called to attend him, and he began rapidly to recover; he threw aside his crutches, can now walk, and is perfectly well.

*Schirrhous tumour of the Breast.*

*Case 208.* Mrs. Yates, 23 Division-street, was taken with an inflammation and tumour of the breast. The applications removed the tumour, and she is now well.

*Epilepsy.*

*Case 209.* Mr. Snyder of Kingston, (N. Y.) was subject to the epilepsy for a great length of time. Fits frequently occurred, and no relief could be obtained. He applied to us, and our prescription cured him.

*Fits.*

*Case 210.* The son of Mr. T. Benjamin, 352 Fifth-street, was seized with convulsions or fits. Our treatment cured him.

*Case 211.* Two or three cases were cured at Mrs. Campbell's, 101 Nassau-street. Several cases of disease in the same family were cured.

*Cancer.*

*Case 212.* The daughter of Mr. Van Nostrand, Brooklyn, Long Island, was taken with an ulcer upon the nose, which continued to corrode the parts, and destroyed a considerable portion of one nostril. It had progressed until it appeared to be incurable; a number of physicians unable to afford any relief. Our treatment eradicated it.

*Measles.*

*Case 213.* A child of Mr. Dick, Grand-street, was given up as hopeless with the measles. Our treatment effected a cure.

*Pulmonary Disease.*

*Case 214.* Mr. Hoyt, of Danbury, Connecticut, was reduced exceedingly low with a cough, flesh and strength wasted away, fever, great quantities of matter daily expectorated, and so deep seated was the disease, that he was pronounced by all who knew him in a decline. None of the physicians to whom he applied could afford him any relief. Under these circumstances he applied to us. The medicines

which we gave him, he states, soon produced a crisis in the disorder. When we last saw him he was nearly well.

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*White Swelling.*

*Case 215.* The child of Mrs. Williamson, 200 North-street, was taken with a pain, inflammation, and swelling of the hip. Ulceration finally succeeded, which proved to be the white swelling or hip disease. There was an orifice or opening, which extended to the bone. She was unable to find relief from any source, until she submitted to our treatment, which cured her. She was a long time a cripple, but now walks, and has been well for a dozen years.

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*Syphilis, Ulcer, &c.*

*Case 216.* Mrs. Smith, Rivington-street, had been afflicted for two or three years with an ulcer in the throat, which a number of physicians were unable to cure. Our prescription effected a cure.

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*Dysentery.*

*Case 217.* The child of Mrs. Holmes, 42 Forsyth-street, was taken so severe that its life was despaired of. The worst and most unfavourable and the last stage of dysentery. Two physicians attended her, under whose treatment she grew worse. In this condition, in the advanced stage of the disease, we were called, and our medicine almost immediately arrested the disease and cured her. One of the attending physicians witnessed the effect of our medicine, and expressed his admiration of it.

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*Spasms or Cramps.*

*Case 218.* We were called to see a woman affected with cramp, and gastric spasms, vomiting, pain, contraction of the tendons, &c. The physician who was called could not relieve her. He was unable to prescribe any thing to allay the vomiting, irritation, &c. The first dose we gave her mitigated all the symptoms, and in a few days she was well.

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*Hydrothorax.*

*Case 219.* Mrs. Kimball, of this city, was afflicted with a dropsy of the chest. Our prescriptions cured her in a short time. We also cured her of another inveterate disease.

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*Fever.*

*Case 220.* Mrs. Christie, residing in Christie-street, called us to see her daughter, who was in the last stage of remittent fever, and although the case seemed almost hopeless, our treatment broke the fever, and she speedily recovered.

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*St. Anthony's Fire.*

*Case 221.* Mrs. L., Stanton-street, received a check of perspiration, which caused the St. Anthony's Fire. It caused such a swelling in the face, as made her totally or partially blind for some time;

great pain, heat, &c., succeeded by ulceration. Our medicine reduced the inflammation, removed the swelling, and soon cured her.

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*St Anthony's Fire.*

*Case 222.* A young woman applied to us with the St. Anthony's Fire in both legs, great pain, heat, itching, inflammation, &c. She had been confined to her room, without being able to walk for many months. A noted surgeon of this city, Dr. C., had attended her a long time, without rendering her any service. Our prescriptions cured her.

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*Dropsy in the Chest.*

*Case 223.* Mr. Richardson, grocer, then residing in Eldridge-street, was afflicted with a dropsy in the chest, pain, fulness, and stricture of the chest, shortness of breath, diminution of urine, &c. The medicines prescribed for him affected a cure.

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*Cancer.*

*Case 224.* Mr. Adams, of this city, had an ulcer upon the lip, which continued to corrode and destroy the flesh for a length of time. Applications were applied which cured him.

*Case 225.* Mr. M'Bride, cartman, of this city, had been afflicted many years with a tumour of the breast, which was pronounced a cancer. Cured.

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*Curvature of the Spine, Tumour, &c.*

*Case 226.* A child of Mr. R., Greenwich Village, was attacked with a disease of the spine. A hard tumour formed by the side of it, which prevented the child from rising or walking. Our treatment cured it.

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*Ulcer.*

*Case 227.* Mrs. Smith, 261 Rivington-street, had an ulcer in the throat, of seven months standing; had applied to twelve physicians in vain; was given up as incurable. Our prescriptions effected a perfect cure.

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*Dropsy in the Chest.*

*Case 228.* Mrs. Walker, in Orchard-street, was afflicted with dropsy in the chest, cured.

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*Callous Tumour.*

*Case 229.* Mary Bleeker, had been troubled for a considerable time with a hard callous tumour on the side. Discutient applications removed it without cutting.

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*Scrofula.*

*Case J. Q.* Underhill, had been for some time afflicted with a scrofulous tumour on the neck or under the chin, applied to different physicians without any benefit. After submitting to our treatment he was cured.

*White Swelling, Ulcer, &c.*

Case 231. The child of Mr. Ross was taken with inflammation in the leg, which terminated in suppuration, and extensively diseased the whole knee, covering it with ulcers, hardness, swelling, &c. Under the treatment of a noted surgeon of this city, it constantly grew worse. Under our treatment it healed up.

*Dropsy of the Chest.*

Case 232. Mrs. L., Centre-street, near Grand, was seriously affected with a dropsy of the chest, pain, difficulty of breathing, diminution of urine, &c. Cured.

*Pulmonary Disease.*

Case 233. The son of Mrs. Burling, had all the symptoms of consumption, cough, pain in the breast, &c. Cured.

*Pleurisy.*

Case 234. Miss Dunlavy, Attorney-street, was so severely attacked with pleurisy, that it appeared that she could not survive but a short time. The physician who was first called could afford her no relief. Immediate relief was given, and she was soon cured.

*Croup.*

Case 235. The child of Mrs. Griffith, in Essex-street, was in the last stage of croup. The physicians who attended him, pronounced him to be incurable and dying. They frequently called in and asked if he was not yet dead. At this time we were called to see him, and although the case seemed entirely hopeless, the child being nearly gone, from the accumulation of mucus in the bronchial vessels and lungs, a few drops of medicine was administered, which caused him to raise the mucus, and relieved the oppression, from which moment he gradually grew better, until he recovered.

*Rickets.*

Case 236. The child of Mr. Washington Lewis, Auctioneer, Chatham-square, was attacked with a scrofulous affection, which terminated in the rickets. He was unable to walk, and very feeble, his joints were enlarged, and the disease seemed almost incurable from its obstinate character. Internal and external means were used to produce a healthy state of the system, by which the child was restored to health, and has for a length of time continued well.

*Pulmonary Disease.*

Case 237. Mr. William Cook, of this city, was attacked with inflammation of the lungs, which continued for a length of time, and then suppuration took place. He continued to raise for many months, large quantities of pus or matter, not less than half a pint each day; pain in the breast, fever and night sweats, continual wasting of the whole body, excessive debility, and almost constant cough. Every



symptom of confirmed phthisis or consumption. The remedies prescribed cured him.

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*Pulmonary Complaint.*

*Case 238.* Mrs. Wicks, of this city, was attacked with an inflammation of the pleura and lungs, which continued for about a year; fever during most of the time, continual pain in the chest, cough during most of the night, expectoration of large quantities of purulent matter; part of the time she was confined to her bed. Cured.

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*Scrofula.*

*Case 239.* Caroline Benedict, of Flushing, Long Island, was attacked with a scrofulous disease in the neck, breast, and right arm, attended with great inflammation and pain. After some length of time it suppurated and discharged freely, but for some reason was afterward twice lanced. The ulcers assumed a very unhealthy appearance, and they extended over a large portion of the neck, breast and side, causing a general taint and disease of the whole system. All the physicians to whom she applied were unable to cure her. After she had been in this condition for about four years, she applied for relief to our institution; a change was speedily effected in the ulcers, and general system. She was restored to health, and has continued so for many years.

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*Ulcer and Cutaneous Eruption.*

*Case 240.* Mr. Samuel Walker, then residing 507 Washington-street, had been afflicted for six months with salt rheum, and an herpetic ulcer on the face. The parts became very much enlarged, very irritable and inflamed, so much so, that he had not shaved himself for four months. It was attended with itching, burning, and the most unpleasant symptoms. A noted physician, Dr. H., of Boston, had attended him, without affording him any benefit. In this situation he was placed under our care, and in twelve days he was cured. I saw him the other day, and he informed me that he had no return of the complaint since, it having been more than a year.

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*Syphilis.*

*Case 241.* Levi M<sup>r</sup> Alister, then residing at 132 Elizabeth-street, had been labouring under the lues venerea, for eighteen months. Most extensive and formidable ulcers covered a portion of the body, from which issued great quantities of matter, so offensive that it was extremely unpleasant to dress them. During the continuance of the disease, he was unable to attend his business. He had been attended by three physicians without deriving any benefit. He was in the New-York Hospital for eighteen months, but the surgeons were unable to cure him. When he was nearly ruined by the disease, we began to prescribe for him. In a few days he was better, and in a few months he was cured.

*Scrofula.*

*Case 242.* A child, a few days since, was brought to the office, aged about twelve months. The symptoms were excessive, inflammation of the parotid glands of the neck, fever, hardness of the parts, swelling so great that the neck was thrown upon one side, much inflammation, the neck enormously enlarged. So aggravated was the complaint, that it appeared incurable. Medicines were applied to promote suppuration, which was finally effected. The contents of the abscess were discharged, and the ulcer healed.

*Scrofulous Tumour.*

*Case 243.* A hard indolen tumour, about the size of an egg, attacked a child of Mr. Carpenter, of this city. It had remained in this condition for some months. Discutient applications were applied, which shortly cured it.

*Inflammation of the Lungs, (Pneumonia.)*

*Case 244.* A child of Mr. Bloomer, of this city, was so severely afflicted with inflammation of the lungs, that little or no hopes were entertained of its recovery. The usual course of treatment restored it to health.

*St Anthony's Fire, (Erysipelas,) Mortification, &c.*

*Case 245.* Mr. R. L., Orchard-street, was taken with erysipelatous inflammation of the arm, which became enormously swelled and inflamed. Suppuration followed, and mortification commenced, and destroyed the greater part of the arm. It was attended with excruciating pain, itching, &c. The case was so desperate that it seemed almost hopeless, but immediately after the application of our medicines, the disease assumed a more healthy aspect. The dead flesh separated, the swelling and inflammation subsided, and in six weeks the arm was well.

*Bilious Remittent Fever.*

*Case 246.* We were called to visit a young man residing with Mr. Eustice in Orchard-street, attacked with bilious remittent fever, tongue furred, nausea, headache, great prostration of strength, skin dry, thirst and fever great, &c. Means were taken to restore all the secretions and excretions of the body, which effected a cure in a few days. A number of others were cured in the same house, affected with various diseases, by pursuing a vegetable course of treatment.

## GENERAL DEBILITY.

*Case 247.* Mrs. Lee, Greenwich street, had been declining in health for a great length of time, flesh wasted, strength gone, restlessness, fever, digestion impaired, with general debility of the whole system. She could find no relief from the ordinary prescriptions. A vegetable course of treatment restored her to health in a few weeks.

*Pulmonary Disease.*

Case 248. Mrs. Provost, 11 Clinton-street, was seized with pneumonia, or inflammation of the lungs, which lasted for several months, and terminated in suppuration. It was attended with a very deep seated cough, with a copious discharge of matter, hectic fever, night sweats, great emaciation, with all the symptoms of consumption. The course pursued at the infirmary cured the disease. A number of others in the same family were cured without mercury or bleeding.

*Ague and Tumours of the Breast.*

Case 249. Mrs. Hadley, Stanton-street, was taken with an inflammation of the breast, which became very hard and swollen, and attended with very excruciating pain, fever, and great debility. Cured.

*Schirrhus Tumour of the Breast.*

Case 250. Miss Tilton, of Shrewsbury, New-Jersey, had a large schirrhus tumour of the breast, which continued to increase for nearly a year. It was attended with darting and shooting pains, great soreness and distress. Was cured in about six months, without a surgical operation. A neighbour of hers, had her breast extirpated by the knife for a similar disease, which proved fatal during the time.

*Cancer.*

Case 251. Mrs. Holdridge had a schurhus tumour, which was pronounced a cancer, and which her physician was unable to cure. She applied to us, and the disease was removed. She was afterward afflicted with inflammation of the lungs, pleura, cramp, &c., and other complaints, which were all cured.

*Ulcer.*

Case 252. Mr. Stewart, corner of Seventh and Lewis-street, was taken with an inflammation of the leg, which was swelled twice as large as the other. From the knee to the ankle it became hard and ulcerated. Several pounds of flesh separated from the calf of the leg. He was either confined to the room, or went upon crutches for near a year. The discharge from it was very copious and fetid, and several physicians treated it without benefit. Among the rest was a professor of the medical school, New-York, who decided that the leg must be amputated. In this situation we were called to treat it, and although we found it very obstinate, after a length of time, succeeded in effecting a cure. The man walks well without crutches.

*Aneurism, Ulcer, Swelling, &c.*

Case 253. Richard White, of Brooklyn, L. I., had an aneurismal tumour in the ham of the leg, (popliteal aneurism.) A surgeon of this city tied the artery above the tumour. This operation, however, was attended with the most serious consequences. The principal sinew of the leg became contracted, ulceration followed, and the leg swelled to at least four times the size of the other. He had been a perfect cripple

for a year ; could not even raise his leg from the floor without assistance. Dr. M., in consultation with a number of other physicians decided that it must be amputated, and a day was appointed to perform it. Under these discouraging circumstances we were called to treat him, and although his case seemed almost hopeless, the treatment soon produced an alteration, and lessened the diameter of it about two inches in a very short time, as we found by measurement. It mended slowly for about a year, when he dispensed with his crutches, and began to walk as usual. He is now attending to his ordinary business. Every persuasion was used by the surgeons to induce him to have it amputated.

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*Inflammation and Ulcer.*

Case 254. A little girl, corner of Anthony and Elm streets, was attacked with inflammation and ulcer upon the ankle. One of the professors of the medical school in this city ordered it to be amputated immediately. A few simple dressings cured it.

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*Inflammation of the Lungs, (Pneumonia.)*

Case 255. A child of Mr. William Marks, printer of this city, aged about one year, was attacked with inflammation of the lungs and croup, so severely, that its life was despaired of. Cured.

Case 256. A child of Mr. N. Cort was attacked with an inflammation of the lungs so severely, that it was given up as incurable. Symptoms, swelling of the throat and neck, great fever, &c. Cured. Also, eight or ten other cases of inveterate diseases, all cured by a vegetable mode of treatment.

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*Fever Pneumonia, &c.*

Case 257. The child of Mr. S. Rust, (inventor of patent printing presses) in Eldridge-street, was attacked with fever and inflammation of the lungs so severely that his life was despaired of. This case was likewise cured. Different members of the family were attacked with ten or fifteen other diseases, all of which were cured without mercury or bleeding. The recoveries were rapid, and no effects of the poison left in the system.

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*Ulcer and general taint of the System.*

Case 258. Mrs. Lewis, 246 Fulton-street, had been labouring for many years under morbid or scrofulous taint of the system, which finally appeared in the form of an ulcer in the arm. She was soon relieved or cured by the treatment.

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*Swelling and Inflammation.*

Case 259. A young lady at Mrs. Bogardus's 23 Division-street, was attacked with a swelling and inflammation of the face, which became so great that she was scarcely able to open her mouth or articulate, and it appeared dangerous. By proper applications, suppuration took place, and she was cured.



*Case 260.* Mrs. P. Gallagher, 105 Chapel-street, was at different times affected with serious complaints. She could find no relief except by our prescriptions. She is now well.

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*Chronic affection of the Chest, Debility, &c.*

*Case 261.* Mr. Miller, 142 Norfolk-street, was afflicted with pain in the breast and side, with general debility, which prevented him from attending to his business for about a year. Our medicines afforded relief, and as far as we know is now well.

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*Nervous Disease.*

*Case 262.* Miss Demarest, Brooklyn, was subject for many years to a nervous affection, which for many years seemed to threaten her life. She could find no relief from any treatment or any prescription, until she applied to our institution. Our treatment arrested the disease and soon afforded relief.

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*Fracture of the Thigh.*

*Case 263.* A child of Mrs. Hutchinson, 161 Stanton-street, fractured the thigh about midway. A physician was called, who only placed a roller or bandage around it, after which we were called to treat it. Upon examination we found that it had not been reduced. We brought the bones in coaptation, secured them by our improved double inclined plane or splint, the bones knit in the usual time, and the boy walks so well that no one could even suspect the accident.

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*Fracture of the Tibia and Fibula, (lower-leg.)*

An elderly woman in the lower part of the same house, fractured the tibia and fibula. It was treated in the usual manner. Means used to reduce the inflammation; and to keep the bones in contact, &c., by which she speedily recovered.

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*Fracture of the Femur or Thigh Bone.*

*Case 264.* Mrs. M., 21 Pell-street, fractured the femur, which had been previously diseased by a scrofulous affection. The ends of the bone were brought together and secured by the improved inclined plane, usual means to subdue inflammation made use of. She speedily recovered, and was enabled to walk as well as ever.

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*Case 265.* I was called to treat Mr. Rice, Eldridge-street, who fell and fractured the femur. The improved inclined plain was applied, rest, enjoined; inflammation was reduced, and the patient rapidly recovered.

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*Case 266.* A child at the foot of Rivington-street, was run over by a cart, which fractured the femur. The physician who was called applied splints and a bandage, and when we were called, we changed the treatment. We applied our bandage, splints, and improved inclined

plane as recommended; reduced the inflammation, and the boy rapidly recovered.

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*Fracture of the Leg.*

*Case 267.* A journeyman of Mr. Samuel Rust, Eldridge-street, broke both bones of the leg, (tibia and fibula.) The usual treatment was pursued, the bones knit, and the patient recovered.

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*Fracture of the Femur with the Capsular Ligament.*

*Case 268.* Mrs. Mott, residing in Mott-street, near Hester, in going down stairs slipped and fractured the thigh bone, near or within the joint. Two experienced surgeons saw the case, and stated that the fracture was within the capsular ligament, and that she would be a cripple for life. We used means to subdue the swelling and inflammation, &c. She can now walk, though not as well as formerly, and the foot of the fractured leg turns considerably outward.

*Case 269.* Mrs. Chase 18 Stanton-street, was confined to her bed a length of time, with great inflammation, and swelling of the whole leg. It was excessively painful, and so much impaired her general health, that her recovery seemed very doubtful. Her former physician she stated, had only injured her. By submitting to our treatment, she recovered.

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*Small Pox.*

*Case 270.* The son of Mrs. Holmes, Forsyth-street, was seized so bad with the small pox, that he became delirious, fever and pain violent. Medicines were given to throw the eruptions to the surface, and when they appeared, he was relieved. In a very short time he was well and enabled to return to his business.

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*Incipient Apoplexy.*

*Case 271.* Mr. Campbell, 24 Stone-street, was taken suddenly with a determination of blood to the head, senses gone, coldness of the extremities, &c. We used warm and stimulating applications, which recalled the blood to the surface of the body; these means afforded relief, and soon effected a cure. He has been well for several years, whereas, under the treatment of his former physician he had a frequent return of the complaint, and was often bled for it.

*Case 272.* I was requested by Mr. Lane, to visit one of his children, aged sixteen months. He informed me that it had been unwell nearly three months, during which time Dr. —, had regularly attended it, without affording any relief. He said he was fully convinced that the child had the consumption, that medicine would be of no benefit to it, and that in calling me, he was actuated more by a sense of duty, than a hope of saving the life of his child.

From what I could learn, from the present symptoms, and a history of the case, the child was evidently labouring under a severe attack of morasmus, (or infantile remittent fever,) and that much aggravated by

improper treatment. Digestion appeared perfectly at a stand, the food passed off without undergoing any change, but what would naturally result from its exposure to heat and moisture. The fæces altogether void of their natural smell and appearance, the appetite entirely gone. Emaciation had gone on so rapidly that there was not sufficient strength left, for the child to turn itself in bed; the cheeks had fallen in, the eyes were glassy and sunk in their sockets, the skin was remarkably pale, except when reddened by the flush of hectic fever.

Under these discouraging symptoms I deemed it an almost hopeless case, but feeling anxious to test the efficacy of the reformed practice, I commenced a course of treatment, and in four weeks it produced an astonishing change in the patient. His flesh became clear and natural, the cheeks were more full and less pale, the appetite was improved, and in fact every bad symptom was subdued: Three months from the time I commenced treating it, I found the child in the enjoyment of better health than it had ever before experienced.

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*Case 273.* This was a female aged nine years, labouring under acute dysentery, in its most aggravated form. The patient had been confined between three and four days, and consequently very much exhausted. Prompt and energetic treatment restored her to health in a few days.

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*Case 274.* This was a case of enteritis, in its most severe form. The patient was aged three years, and had been generally healthy, (except at nine months old it had the small pox.) The symptoms were too plainly marked to mistake the disease. The pulse was quick, hard, and resisting, the tongue white, a streak of black down the middle, severe pain in the umbilical region, sickness of the stomach, and vomiting, the bowels costive, great restlessness and tossing of the arms. Two physicians were requested to visit it, and both pronounced the case a hopeless one, yet the reformed treatment proved victorious, and the child was completely cured without the use of the lancet.

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*Case 275.* This was a child aged eighteen months, exhibiting all the symptoms of pneumonia, or inflammation of the lungs. Respiration was extremely difficult, and an almost incessant cough, mucus accumulated so rapidly in the trachea, as to greatly endanger the life of the patient, expectoration was suspended, and the patient was thrown into epileptic fits. The abdomen was much distended and tense; the tonsils were enormously swollen, and great determination of blood to the head. This case was also cured without bleeding.

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#### *Chronic Diarrhæa.*

*Case 276.* The patient was a married lady, about thirty-six years of age, she had been confined about two weeks, and was so much reduced, as not to be able to sit up in bed. The fourth day after she commenced taking medicine, she was able to leave her bed without assistance, and in one week more was perfectly cured.

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*Case 277.* Were children of Mr. ——. These children were se-

verely afflicted with *apthæ* or thrush. Their mouths and tongues were completely covered with the eruptions, and the breath so foetid that it was extremely disagreeable to remain near them. They were all cured in a few days.

During the month of October, I attended about twenty-five other cases, and with universal success.

SAMUEL M. OLDEN.

Student of Medicine.

Another student, S. B. Merrill, attended during his residence at the institution, several hundred patients, many of which were afflicted with diseases of the most virulent character, and the same success attended his practice.

The other students of the "Medical School," connected with the infirmary, have attended several thousand cases with the same invariable and universal success.

### *Hydrocephalus.*

Case 278. A child of Mrs. —, No. 170 Rivington-street, between four and five years old. Symptoms, fever, restlessness, nausea and vomiting, bowels relaxed, stools of a dark colour, and very offensive, pulse quick, pupil of the eye very much dilated, intolerance of light, tongue furred, appetite impaired, skin dry, pain in the head, and extremely hot, she would throw her head back and shriek or cry out without any perceptible cause, lethargy, &c. She had been ill and rapidly growing worse, for about four days, when I was called. She was when I first saw her in almost a hopeless condition, so bad indeed that her life was despaired of, and her mother and friends imagined her dying; but the following treatment cured her, and she is to the best of my knowledge now perfectly well. I commenced with purgatives, the neutralizing physic to regulate the bowels, afterwards the bilious physic, cooling washes to the head, put the feet in warm ley water, and bathed the surface, gave the sudorific tincture, but it did not agree with her, I then gave, to keep up a gentle diaphoresis, the amaranthus. This treatment was repeated for about five or six days, when I gave the digitalis and spearmint, and finished with restorative cordial, which performed a perfect cure.

*Ibid.*

### *Stricture of the Urethra.*

Case 279. Thomas Parker, 147 Christie-street, affected with a bad stricture of the urethra, the bladder very much distended, no urine voided for several days, the operation of puncturing the bladder was proposed to the patient by several physicians, in consultation, but they were refused, and immediate application made at the Infirmary; a physician attended, who commenced treating it on the reformed system, and in a short time he obtained relief, and was discharged cured.

### *Inflammation of the Eye.*

Case 280. Margaret Wade, was seized with a severe pain in the eyes, great swelling and inflammation, after a while she became blind,



she then applied to the eye infirmary. The attending physician prescribed seven weeks without any good effect, the pain was so great at this time as to cause delirium; she was then placed under our charge; the first application produced relief, and all the symptoms gradually subsided; in ten days her sight was restored, and in two weeks she was enabled to walk the streets, and attend to her usual business.

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*Case 281.* Thomas and Elizabeth Taylor, aged seven and five years, were placed in the New-York Alms House, and were shortly seized with sore eyes, so swelled and inflamed, constantly discharging matter, that they became blind, and continued so for two months, suffering with extreme pain; they were obliged to lay on their faces continually, to avoid the light; even in this position, if the windows were opened it would cause the most excruciating agony. All the treatment of the physicians afforded no relief; so deplorable was their condition, that the superintendant advised the mother to remove them; accordingly they were placed in our infirmary. Under our treatment the swelling gradually subsided, the discharge soon ceased, and in a short time they could see as well as ever.

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#### *Ophthalmia.*

*Case 282.* Henry Ogden Seavy, aged five years, was brought to the infirmary from the Alms House, by Alderman Whiting. The complaint was ophthalmia. It was pronounced by one of the physicians, (a member of the board of Aldermen,) to be a "deep seated case." The tunica conjunctiva, or external coat of the eye was much inflamed, purulent matter was constantly discharging from the eyes, the lids of the eyes were also inflamed and swollen, as well as the surrounding integuments. The head also was affected with a preternatural degree of heat. He was received at evening, and before an opportunity offered of giving relief, all the symptoms were much increased; the upper lids projecting so far over the lower, that they could not be opened. Cooling lotions, and other means were now applied to his eyes, and about 12 o'clock the next day his eyes were opened, and the applications through the day checked in a considerable degree the purulent discharge. In the morning, after having applied emollient applications through the night, the swelling was rather less, and the eyes were opened several hours earlier than the preceding morning, though they had been much aggravated by crying, still no very visible change for the better had taken place. The whole system seemed to participate in the virulence of the disease, proving beyond a doubt that the fluids were contaminated. An alterative course of treatment was now rigidly adhered to, with a view to excite a healthy action; soon as the constitution was fairly brought under the influence of medicine, a very visible and striking change took place. The boy recovered from that apathy and depression of spirits and became cheerful and sprightly, the swelling, inflammation, and discharge gradually subsided, and in a short time he became as well as ever.

*Gastric Spasms and Convulsions.*

*Case 283.* John Smith, aged twenty-six, residing in Ludlow-street, No. 11, was seized suddenly with violent gastric spasms and convulsions of the whole body, caused by drinking cold water to excess. The convulsions were so great that it took six men to hold him. A common practitioner was called, who immediately bled the patient, and prescribed some other medicines, under the use of which he was evidently failing fast. His friends being very much alarmed, sent to the United States Infirmary for a physician, who found the man to all appearance dying, his pulse was hardly perceptible at the wrist, the extremities cold, and life almost extinct. The treatment was immediately changed, which produced the most immediate salutary effect. He soon began to show signs of returning life, and in three hours the symptoms were all allayed, so that in a few days he was enabled to return to his usual avocation.

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*Scrofula.*

*Case 284.* Mrs. Sniffin of Ludlow-street, requested attendance from the Infirmary, for her son, aged four years and a half. Found the boy with symptoms as follows: a variety of glandular swellings, tumours on the neck, a large tumour on the front of the right shoulder, near the arm pit, also one on the back part of the left shoulder, near the same place, the size of a hen's egg, painful and much inflamed. A large abscess formed, broke and discharged a large quantity of ichorous matter, mixed with curdy flakes. The right leg he was unable to straighten, the knee largely swelled, much inflamed, and very painful. Tumour on the back part, in which suppuration took place. The left leg was also much enlarged about the knee, painful, with symptoms of white swelling. A part of the abdomen above the left groin, the bigness of a saucer, was indurated or hardened, and projected in form of a tumour. Violent pain in the right side, and shoulder. Constipation of the bowels, loss of appetite, suppression of urine, cough, hectic fever, and night sweats. He was perfectly cured in seven weeks.

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*Case 285.* Mr. Cline, residing in Catherine-street, had a long time been afflicted with a deep seated cough, pronounced consumption, had been attended by two physicians, and abandoned the case as incurable, the treatment pursued completely restored his health.

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*Case 286.* Mr. Outwater of New-Jersey, reduced to a low and dangerous state by an attack of bilious remittent fever, which had degenerated into the typhus; his physicians were administering to him Dover's powder, combined with mercury. Stomach, liver, and whole system in a morbid and diseased state, reduced so low, that his recovery was considered doubtful; after the first portion of medicine was given, he grew better, and from that time he recovered rapidly, and in two or three weeks he became well.

*Case 287.* Mr. Coles Tompkins, was seized last summer with the bilious remittent fever, under the attendance of two or three physicians, he constantly grew worse; in this situation we were called to prescribe, and our treatment soon cured him.

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*Case 288.* A child of Mr. Avery, broke its arm immediately above the condyle of its elbow, the upper bone nearly protruded through the integuments, the usual dressings were applied, with the angular splint, and in two weeks the child could use its arm.

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*Case 289.* Mr. —, had a fleshy tumour on the leg, which grew until it became very large, the usual applications removed it.

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*Case 290.* Mrs. Hozier, of Williamsburg, L. I. had been a long time afflicted with fever cough, debility, hectic fever, and night sweats, and considered incurable by her attending physician, who pronounced her disease the consumption. She had been bled, blistered, and taken mercury without any beneficial effect. After changing the treatment, and prescribing vegetable agents, she began to improve; and at the present time she is free of all the former symptoms, and has resumed her usual business.

*Treatment:* The treatment in one particular differed from that laid down under the head of pulmonary consumption. 1st. The pulmonary balsam was given. 2d. Tincture of foxglove, to lessen arterial excitement. 3d. Elixir of vitriol to aid in checking night sweats. 4th. A syrup made of liverwort, and the rock polypod, and given alternately with the other. 5th. A pill was given composed of the yellow pine turpentine, as it exudes from the tree, containing about three grains each. 6th. For drink, equal parts of milk, warm from the cow, and hot water drank freely.

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### *Fistula.*

*Case 291.* Mr. Washington Lewis, Chatham-square, was attacked with a fistula, excruciating pain, great swelling and inflammation. An abscess formed near the rectum, which was extensive, and through which issued great quantities of pus or matter. He was confined to his bed or room for months, during which time he was attended by two other physicians, or surgeons of this city. A very formidable operation was performed, two or three times in succession without effecting a cure. Under these circumstances he applied to the infirmary, and submitted to our treatment, when he began to grow better, and after a few months the fistula was healed, and he now enjoys excellent health.

## AFFIDAVITS OF MEDICAL CASES.\*

John Wright, being duly sworn, deposeth and saith, that, in the year 1826, while residing in Sandy Hill, Washington county, state of New-York, I was seized with a very excruciating pain, and great inflammation in my eyes. I was attended by a great number of physicians, in all, not less than twenty or thirty, during a period of four years. Some pursued one course of treatment, and some another. I was bled several times, had my eyes scarrified, took large quantities of salts, was salivated until my teeth were loose, and my tongue very much swollen, and my general health very much impaired. I was repeatedly blistered, cupped, leeches, and had a seaton introduced in my neck. Part of the four years, while submitting to this course of treatment, I was partially or totally blind. My pain and sufferings were very exquisite throughout my whole head, temples, and eyes; the heat, swelling, and pain were so excessive, that I was obliged to keep the parts continually wet with cold water; to obtain the least mitigation of the symptoms; such, indeed was my distress, that my life became a burden to me. During a part of this period, I was attended by some of the most noted physicians in the city of New-York. They continued to attend me, until they appeared to abandon my case as hopeless. The last physician, seeing that his treatment was of no use, recommended me to apply to Dr. Beach, remarking at the same time, that he would help me if any physician could. At this time, when all hopes had nearly failed, I placed myself under his care, and found, before much time elapsed, a change for the better. My pain, and all the unfavourable symptoms, in less than a week began to subside. In three weeks I could distinguish objects, in two months I was enabled to leave my house and walk the streets without any one to lead me. The discharge from the eyes, and the opacity or film, gradually ceased and disappeared; and they continued to grow more healthy, until in a few months from the time I placed myself under his treatment, I was enabled to commence business, which I have continued ever since; four or five years having passed without my being able to perform any kind whatever, or even to walk without being led.

JOHN WRIGHT.

Subscribed and sworn before me, this 7th day of June, 1831.

EBENEZER WHITING, *Commissioner of Deeds.*

Henry Weed, being duly sworn, deposeth and saith, that about the beginning of March last, my wife Margaret, was seized with a severe pain in both her eyes, great swelling and inflammation succeeded, till in a short time, total blindness was the consequence. I then placed her under the care of Dr. Delafield, of the Eye Infirmary, who made various applications and prescriptions for some weeks, without any benefit; but on the contrary was continually growing worse. The pain was so severe that she became delirious. I then applied to Dr. Beach, who commenced a different course of treatment. His first applications produced relief, and all the symptoms gradually subsided,

\* These affidavits were taken at the request of Alderman Whiting, for a particular object.



until she was free from pain. In the course of one week or ten days she could discern objects. In three weeks she was enabled to leave her bed and walk the streets, and soon after resumed her usual business.

HENRY WEED.

Sworn before me, this 3d day of June, 1831.

EBENEZER WHITING, *Commissioner of Deeds.*

Denis Hanan, being duly sworn, deposeth and saith, that about five or six months ago, my child, aged seventeen or eighteen months, was severely afflicted with pain, swelling, and inflammation of its eyes. Shortly after, I applied at the Eye Infirmary, corner of Broadway and Grand-street, and placed it under the treatment of the physicians of that institution, for about six weeks. The child's eyes however did not mend, but the symptoms still continued, until I feared that irrecoverable blindness would follow. I then applied to Dr. Beach, and placed the child under his treatment. I soon perceived a great improvement, which continued till the child recovered its sight.

DENIS HANAN.

Sworn before me this, this 3d day of June, 1831.

EBENEZER WHITING, *Commissioner of Deeds.*

Elizabeth Taylor, deposeth and saith, that in the year 1829, two of my children, Elizabeth, aged seven, and Thomas, aged five, were placed in the New-York Alms House. The boy had not remained there more than two weeks, before he became infected with sore eyes. His eyes were so swollen and inflamed, that he became blind, and continued so for the space of two months, during which term he suffered the most excruciating pain; his agony and distress were very great; he constantly lay upon his face, and even in this position, if the window was opened, he screamed violently. He remained in this situation for two months; all the treatment of the attending physicians affording no relief.

After my daughter Elizabeth had been in the Alms House for two months, she was seized with the same complaint in her eyes. Her situation had become so deplorable in consequence of the disease, that her nose was lanced to discharge the matter. She remained blind or diseased for the space of six months, and so bad had these children become that Mr. Burtis, the superintendant, advised me to remove them, stating that he was fearful that they never would get well. I took them home, and then sent for Dr. Beach. At this time they were both blind. Their eyes were exceedingly swollen, greatly inflamed, and matter continually running from them; the least light produced the greatest distress. They were obliged to lay upon their faces the greatest part of the time. In about one week after this, my third child took the complaint, and also became blind.

The prescriptions and treatment of Dr. Beach, was now adhered to. In a short time I observed some change, the swelling and inflammation decreased, the discharge lessened, and before long they could all see. They continued to improve under the treatment, till in about two

months, or a less time, they were cured as well as ever, with the exception of weakness. They now appear as well as ever.

Another child, boarding with me, also caught the disease at the same time. The mother removed it, and placed it under the care of another physician, and the disease still remains, it having been afflicted for the space of one year.

ELIZABETH TAYLOR.

Sworn before me, this 6th day of July, 1831.

EBENEZER WHITING, *Commissioner of Deeds.*

William G. Boggs, deposeth and saith, that about the first of October last I was seized with an inflammation of the eyes, great pain, swelling, loss of sight, and discharge of matter. I applied to two physicians who decided that the case was a very obstinate one, and would require a course of mercury, to relieve it, which would take several months. I then applied to Dr. Beach from recommendation, which I received from others, one of whom especially stated, that he had suffered from inflammation of the eyes for two years; had been treated at the Eye Infirmary for some time, had his eyes scraped or cut without benefit; and after having submitted to the treatment of Dr. Beach, had received the use of his sight; having been prevented from attending to any business for two years.

Dr. Beach, when I first applied to him, stated that my case was obstinate, but that he could relieve them. I submitted to his treatment, and in seven weeks I again commenced my usual occupation.

WM. G. BOGGS, *Printer, Office of the Com. Advertiser.*

Jacob Cooper is a brother-in-law to Wm. G. Boggs, and was seized with the same complaint, which operated in the same manner, or was attended with the same symptoms. I applied to Dr. Beach, and by attending to his prescriptions, I received my sight in four weeks.

JACOB COOPER, *Office of the Com. Advertiser.*

Mrs. Lucinda Whaley, No. 55 Suffolk-street, deposeth and saith, that Martha Ann Smith, aged nine years, was received into my house, from the Alms House, about four weeks ago, where she had been severely afflicted with the prevailing complaint in that institution. When I first took her in charge, the following were her symptoms; her eyes were red, extremely painful, and attended with much swelling during the night, so much matter discharged from the eyes that they became glued together, and could not be opened in the morning, until after two hours washing. Great pain in the head, with an entire inability to bear the light of day. Soon after I received her, fearing that she would lose her sight altogether, I took her to Dr. Beach, who had previously given me great relief when my own eyes were inflamed, he gave me some medicine both to be applied internally and externally, I immediately commenced administering according to his directions, and the next day her eyes were better, the treatment was continued, and in a few days her eyes had undergone a great change. It is now

about three weeks since Dr. Beach commenced his treatment, the child is not necessitated to wear any shade over her eyes. No speck is left on either eye, and in short, she may be considered as well as ever, save her eyes are a little weak.

LUCINDA WHALEY.

Sworn before me, this 2d day of July, 1831.

EBENEZER WHITING, *Commissioner of Deeds.*

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*Cholera.*

Case 298. During my appointment by the Board of Health of this city, there were treatments to over one thousand cases of *Cholera*, either in the premonitory or confirmed state of the disease. In the first stage of the disease every case was successful, in the second stage the great proportion was cured, and nearly all, except the most malignant cases, and those to which we were called too late.







LEONTODON TARAXACUM.



COMMON DANDELION.

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FRONTISPIECE.

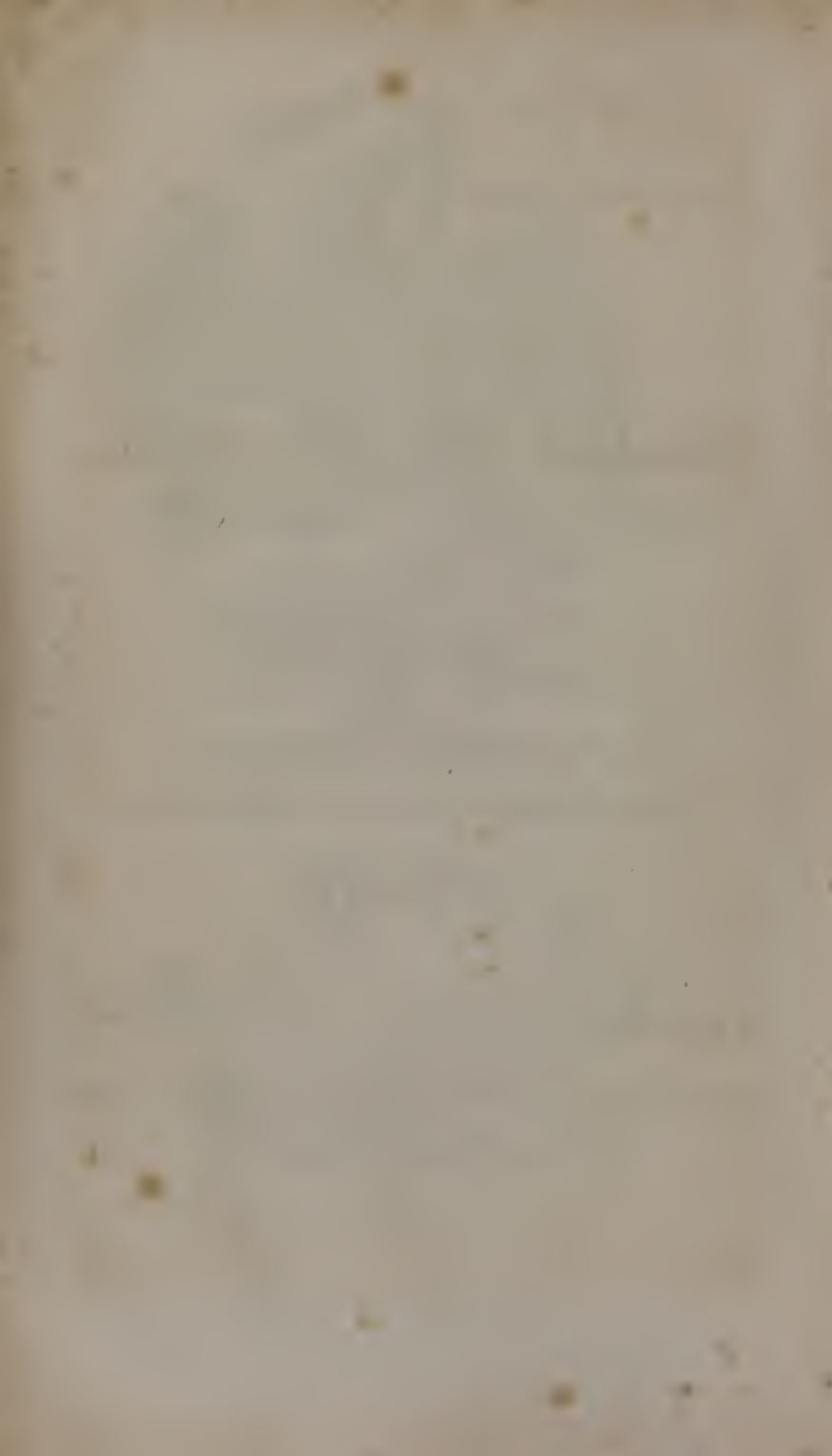
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APPENDIX,  
CONTAINING A TREATISE  
ON THE  
INDIAN OR SPASMODIC CHOLERA,  
AS IT OCCURRED AND WAS TREATED IN THE CITY OF NEW-YORK,  
IN THE SUMMER OF 1832,  
AT THE  
TENTH WARD MEDICAL STATION,  
UNDER THE APPOINTMENT AND SANCTION OF THE  
*BOARD OF HEALTH AND CORPORATION.*

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ALSO:  
A TREATISE ON THE DISEASES OF WOMEN AND CHILDREN.

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# MALIGNANT,

OR

## SPASMODIC CHOLERA.

*"This pestilence (says the London Quarterly Review) has, in the short space of fourteen years, desolated the fairest portions of the globe, and swept off at least Fifty Millions of our race. It has mastered every variety of climate, surmounted every natural barrier, and conquered every people. It has not, like the simoom, blasted life, and then passed away: the Cholera, like the small pox or plague, takes root in the soil which it has once possessed."*

### DESCRIPTION.

THIS disease, which has committed such terrible ravages in the old world, has found its way across the Atlantic, and has prevailed to a most alarming extent throughout the continent of America; it has proved one of the most mortal of any other that has visited the human family;\* and although it is in the mouth of every person, the *pathology*, or nature of it, seems to be very little better understood than it was when it first made its appearance; among the numerous physicians who have been called to treat it, no two of them entertain similar views, or treat it in the same manner.

For fifteen years past it has been traversing the globe, spreading over vast districts of country, and cutting down great numbers of its inhabitants; crossing seas and oceans, and travelling by land at all seasons of the year, prevailing alike in the heat of summer, and cold of winter, being subject to no known laws, although usually cold weather destroys it. Sometimes its victim is struck as it were with a thunderbolt, and almost immediately expires. In most cases, however, it manifests itself in its mode of attack more like other diseases. Wherever it comes, it is terrible indeed; it fills the inhabitants with terror and dismay; "the very sight of the external expression of the unutterable agonies of its victims, appals the strongest nerves;" even physicians, whose feelings, by their profession, are steeled against undue emotions, confess themselves unmanned, and their whole frame to be chilled with horror, when they stand over their suffering patients, feeling as if their own sympathy would inevitably draw them

\* I have consulted the following authors: Winslow on Cholera. Dr. Wm. Stephens, Do. Dr. Ashbel Green, Do. Broussais, Do. Yates, Do. Bell, & Condrae, Do. Leary, Do. O. N. Binaghi, Do. *New-York, Cholera Hospital Report.*



into the same convulsions, and to the same fate. They say, "We never saw disease on this wise. It is new—it is strange—it makes us wish we were not physicians." Here man finds himself inclined to fly from the distress of his fellow when he stands most in need of his assistance, stricken with horror at the frightful phenomenon before him. Such are some of the features and effects of this disease which has at length fixed itself on our continent, appearing equally as destructive here as it has been in the old world.

The generic appellative *Cholera*, is radically derived from a Greek word, which signifies bile. The title was appropriated in consequence of one of the most prominent symptoms being either a redundant flow of bile into the intestines, accompanied with evacuations of a *bilious fluid* characterizing *Bilious Cholera*, or a total absence of bile in the intestines, with evacuations of a *watery fluid*, characterizing *Spasmodic Cholera*. These symptoms are so completely opposed to each other in the quality of the fluid discharged, that attending to them alone will, in general, preclude the possibility of confounding the two species.

The characteristic symptoms of this complaint, are, purging, vomiting, cramps of the lower extremities, choleric decomposition of features, profound alteration of the voice, absence or extreme feebleness of the pulse, great thirst, non-secretion of urine, general prostration, coldness and discoloration to a greater or less extent of the surface, integrity of the intellectual faculties.

#### HISTORY.\*

SINCE the Black Plague, says a writer, slaughtered one fourth of the inhabitants of Europe, in the fourteenth century, no pestilence has ravaged the world to such a frightful extent, and with such unappeasable ferocity, as Spasmodic Cholera. In the short period of fifteen years, it has ransacked Eastern Asia, the Islands of the African Sea, Persia, Arabia, Mesopotamia, Syria, Russia, and Poland. It has traversed the Grand Duchy of Posen and Gallicia, it has visited Prussia, and Germany. Wherever it has yet appeared, it has sel-

\* 1.—Die Asiatische Cholera in Russland in den Jahren 1829, 1830, and 1831. Von Dr. J. R. Lichtenstadt, &c. Berlin. 1831.

2.—Die Cholera Morbus; ihre Verbreitung, ihre Zufälle, &c. Von Dr. Schnurrer, &c. 1831.

3.—Rapport au Conseil Supérieur de Santé Sur le Cholera Morbus Pestilentiel. Par Alex. Moreau de Jonnes, &c. Paris. 1831.

4.—Mémoire sur un Nouveau Traitement du Cholera Morbus, et des Affections Typhoïdes, &c. Par H. F. Ranque, &c. Paris. 1831.

5.—History of the Epidemic Spasmodic Cholera of Russia, &c; by Bissit Hawkins, M. D. &c. London. 1831.

6.—Cholera; its Nature, Causes, and Treatment, &c. By C. Searle. London. 1831.

7.—Papers relative to the disease called Cholera Spasmodica in India, now prevailing in the north of Europe. Printed by authority of the Lords of His Majesty's Most Honourable Privy Council. London. 1831.

8.—Trattato delle varie specie di Cholera Morbus: Di Michele Buniva, M. D. Turin. 1831.

dom destroyed fewer than one-third of the diseased ; in general it is fatal in proportion of one half ; and not unfrequently three-fifths, two-thirds, and even six-sevenths of the infected have perished. Little respect has been hitherto paid to any country which it has invaded, whether insular or continental ; whether distinguished for its salubrious or pestilential character. It has traversed the burning sands of Arabia as rapidly as the banks of the Euphrates ; Caucasus and Mount Ararat, in common with the jungly marshes which are periodically bathed in the waters of the Ganges ; and although the number of the healthy whom it has infected, and the number of the infected whom it has destroyed, considerably vary with the density, health, and habits of the population, the Tartar and the Turk, the Indian Nabob and the Persian Prince, have indiscriminately suffered.

It is, therefore, most desirable that something precise and authentic should be more generally known of the character and causes, rise and progress, symptoms and treatment, of a scourge so extensive in its range, and so mortal in its influence, that it may appear how far the means of checking its further progress lie within the exercise of human skill ; and the treatment found best adapted for its cure, may be fully understood. Some such information it is our present object to convey, and no source of intelligence which lay within our reach has been neglected.

Cholera is a disease which has been long known and fully described by many authors ; but until about the middle of the seventeenth century, neither its prevalence nor fatality was such as to invest it with the character which it now wears. As it usually appeared during the heat of summer and the fruit season, it was very generally ascribed to an elevated temperature and the immoderate use of fruit ; but although it was occasionally violent, its ordinary features were by no means alarming. Sydenham says that it appeared in an epidemic form in England during the summers of 1669 and 1676, and that its symptoms were so severe, as to "frighten the bystanders, and kill the patient in twenty-four hours." According to Le Begue de Presle, it prevailed in 1762 in Bengal, and carried off 30,000 negroes and 800 Europeans. Dr. Paisley mentions it as being at Madras, in 1774 ; in 1775 it seems to have invaded the Mauritius ; and in 1781, a division of Bengal troops were attacked by it so fiercely at Ganjam, that 5,000 were admitted into the hospital during the first day, and by the end of the third, the half of the entire corps were ill. Men, previously in perfect health, instantly dropped dead upon the ground, and few survived the first hour, who did not ultimately recover. In 1780, during a festival at Hurdwar, it destroyed 20,000 people ; and in the records of Madras it is stated to have raged at Arcot, in 1787, as an epidemic.

It is, therefore, erroneous to maintain, that this pestilence made its first entrée into notice in 1817 ; for with the exception that the evacuations are described as "mostly" bilious, in the Cholera of Arcot, whereas in the present epidemic they are "always" watery, the symptoms of both affections are precisely the same. Trallian divides Cholera into the bilious diarrhœa, the bilious Cholera, and the Chole-

ra without bile; and as Dr. Johnson observes that this disease assumes every degree of violence from the *mort de chien*, in which nothing but phlegm is ejected, to an ordinary Cholera, in which the ejections are principally composed of bile, it is not unreasonable to infer that the Cholera of 1817 is only an aggravated form of a disease which had existed previously. The Brahmins have long since described a malady which they call *Vishuchi*; and the Japanese a similar affection which they call *Senki*; both of which have a very striking resemblance to Spasmodic Cholera; and certain it is that Sydenham, whose accuracy of observation is well known, never alludes, in his description of the severe form of Cholera which he witnessed, to the existence of bile in the evacuations, merely calling them "*pravi humores*," or bad humors.\*

\* *Cholera*. [Noticed by Curtis, in 1782.] From this period, up to the year 1787, and perhaps even to 1790, the Cholera would appear to have existed epidemically, in various parts of India. Curtis states, that the fleet, in which he served, joined Sir Edward Hughes's squadron at Madras, in the beginning of 1782; in May of that year, his ship, the Seahorse, arrived at Trincomalee, and he says, "The *mort de chien*, or cramp, I was also informed by the attending surgeon, had been very frequent and fatal among the seamen, both at the hospital and in some of the ships, particularly in the Hero and Superb." The Seahorse had no case of the disease till the 21st of June, when between that day and the 25th they had eight cases.

"In every one of the eight cases the symptoms were so much alike, both in order and in degree, that a description of any one would answer almost equally well for every other. Any difference that took place was in the suddenness of the attack, or the rapidity with which the symptoms succeeded each other. In all of them the disease began with a watery purging, attended with some tenesmus, but with little or no griping. This always came on some time in the night, or early toward morning, and continued some hours before any spasms were felt; and slight affections of this kind being very common in the country, the patients seldom mentioned them till they began to be more severe, and extended to the legs or thighs. *This purging soon brought on great weakness, coldness of the extremities, and a remarkable paleness, sinking and lividity of the whole countenance.* Some at this period had some nausea, and retching to vomit, but brought up *nothing bilious*. In a short time the spasms began to affect the muscles of the thighs, abdomen, and thorax, and lastly they passed to those of the arms, hands and fingers; but I never saw, then or afterward, those of the neck, face, or back, at all affected. The rapidity with which these spasms succeeded the first attack, and their severity, especially as affecting the muscles of the thorax and abdomen, denoted in general the degree of danger in the case. The affection is not, as in *tetanus*, confined to a single muscle, or to a certain class of muscles only. Neither does it, as in the *spasmus clonicus*, move and agitate the members. It is a fixed cramp in the belly of the muscles, which is gathered up into a hard knot, with excruciating pain. In a minute or two this relaxes, is again renewed, or the affection passes to others, leaving the miserable sufferer hardly an interval of ease: and, lastly, it passes from one set to another; from those of the inferior extremity to those on the upper parts, leaving the former free. The patients complain much of the pain of these cramps; think they obtain some relief from friction of the parts, and cry to their companions to rub them hard. As the disease proceeded, the countenance became more and more pale, wan, and dejected; *the eyes became sunk, hollow, and surrounded with a livid circle. The pulse became more feeble, and sometimes sank so much as not to be felt at the wrist in two or three hours after the spasms came on.* But so long as it could be felt, it was but little altered in frequency. If the spasms happened to intermit, it would sometimes rise a little, and the countenance assume a better look. The tongue was generally white, and more or less furred toward the root; the patients had all *great thirst*, or rather a strong desire for cold drinks; but there was *no head-ache or affection of the sensorium commune throughout.*

"The coldness of the extremities, which was perceptible from the very first, continued to increase, and spread over the whole body, but with no moisture in the skin till the severity of the pain and spasms forced out a clammy sweat, which soon became profuse. *The hands now began to put on a striking and peculiar appearance. The*



But however this may be ultimately settled, a very malignant form of this disease suddenly appeared on the 28th of August, 1817, at Jessore, a town situated about one hundred miles north-east of Calcutta. From twenty to thirty died daily, and although the inhabitants became at length terrified, and deserted their habitations, 6,000 perished in the short space of a few weeks. It rapidly spread through the neighbouring country to Dacca, Patna, Dinnapore, and Nuddea. In September, it reached Calcutta, and since that time the metropolis of British India has been regularly invaded by it during every succeeding season. In November, when the English army were preparing to go out to battle with the Hindostan chiefs, it attacked its central division, and in ten days destroyed 764 officers, and 8,500 men. From Calcutta it travelled westward to Bahar, and from Bahar northward to Benares, Lucknow, Cawnpore, and Delhi. It then directed its course southward to Agra, Hussingabad, and Nagpore. From Nagpore it again struck off in a south-west direction to Aurungabad, then to Panwell and Poonah; and by the second week in September, 1818, it took up its residence in Bombay, on the western coast of the Indian Peninsula.

Notwithstanding this rapid journey from Jessore to Bombay, it was equally active in its movements along the Coromandel coast, in reaching Madras; for, while it was shooting northward from Jessore to Dacca, it was at the same time penetrating southward to Chitagong. By the 20th of March, it had entered Ganjam, it reached

*nails of the fingers became livid, and bent inward: the skin of the palms became white, bleached, and wrinkled up into folds, as if long souked in cold water; the effect, no doubt, of the profuse cold sweat, which is one of the most pernicious and fatal symptoms of the disease, both from the effect it has in such a climate, of exhausting the strength, and in abstracting heat from the system. In some of the present cases, and in many others after this, we had recoveries from the severest degrees of spasmodic affection; even where the pulse had been for hours completely lost at the wrist, and the body perfectly cold; but never of any who had these profuse cold clammy sweats, and where the hands had put on this appearance.*

*"All this while the purging continued frequent, and exhibited nothing but a thin watery matter or mucus. In many, the stomach became at last so irritable, that nothing could be got to rest upon it; but every thing that was drank was spouted out immediately; without straining or retching. The countenance and extremities became livid, the pulsations of the heart more quick, frequent, and feeble; the breathing began to become laborious and panting; and, in fine, the whole powers of life fell under such a great and speedy collapse, as to be soon beyond the power of recovery. In this progression, the patient remained from three to five or six hours from the accession of the spasms; seldom longer. These began at last to abate, but with more internal oppression, great jactitation, panting and gasping for breath, from the diminished action of the respiratory organs; for there were no marks of oppression or effusion on the lungs; and the motion of the heart, so long as it could be felt, became more and more quick and irregular, till death came at last to the relief of the miserable sufferer. Sometime before that event took place, the spasms gradually abating, left the sufferers entirely, and so much possession of their faculties did they retain, that they would continue to talk sensibly to their messmates to the last moment of their life, even when the whole body had become perfectly cold, and all pulsation of the heart had ceased for a long time to be distinguishable.*

*"About the middle of July, 1782, I entered on duty at Madras hospital. Here, again, I had occasion to see many more cases of the mort de chien. It was frequent in the fleet in the month of August, and beginning of September, the season at which the land wind prevails on this part of the coast. We had some cases in the hospital in the end of October, and in November after the monsoon, but few in comparison."*



Aska in April, in May it was at Vizianagram, at Mazulipatam in July, and on the 8th of October, 1818, it had entered Madras, about a month after its appearance at Bombay. Now, when it is considered that during the winter months the cold had rendered it inactive, it will appear that this pestilence traversed the whole Peninsula of India, or about 66,000 square leagues in less than a year.

It is not our intention to enumerate and describe the various irruptions which Cholera has made from that period to the present time in British India; suffice it to say, that with the exception of the winter seasons, it has unceasingly preyed upon their Eastern settlements. Toward the close of each November, it only hybernates to rest, that on the approach of spring it may burst forth afresh to repeat its injuries; and, although it has thus swept, with the besom of destruction, its towns and its rivers upward of fourteen times, it still finds fresh victims for the slaughter, and it still betrays a poison as malignant as ever. Even the inferior animals are said not to be exempt from its influence. On its first appearance, a great number of cattle died in the most extraordinary manner, in the grand army of India. During the October of 1827, many of the dogs in the streets of Calcutta were attacked with Cholera symptoms and killed. Mr. Chalmer observes, that in the towns near the hills, where the epidemic was so fatal, a disease occurred among the cattle, which kept pace with, and often exceeded in mortality that of the human species. According to Dr. Ranken, goats and camels died of it in Rajputana: and it would appear that at Vercelli, in Italy, the same phenomena sometimes occur, when the ordinary Cholera is more than usually severe. Mr. Searle examined some ducks, which he was convinced died of the Cholera, and he found in their stomach and bowels the same appearances which are discovered in the human subject after death.

A few months after its first appearance at Jessore, and while it was travelling through the northern provinces, it began to ravage along the eastern shore of the Gulf of Bengal; and in 1819 it reached the kingdom of Arracan. From Arracan it extended itself into Siam, and after destroying 40,000 in Banku, the capital of that kingdom, it passed into the Peninsula of Malacca. In October, it entered the Islands of Sumatra, and Penang; Java and Borneo afterward suffered; Canton was attacked in 1820, and at Pekin its mortality was so frightful that the government were obliged to have the dead interred at their own expense. From China it passed to the Philippine and Spice Islands. Thus, in little more than two years did it traverse a space in Eastern Asia, which, from north to south, is not less than 1,300, and from west to east about 1,000 leagues in diameter.

Two months after Cholera entered Madras, it travelled along the eastern shore of the Peninsula, through Arcot to Palamcottah, from whence it traversed the strait, and entering the province of Jaffna, which is opposite to Palamcottah, it penetrated into the capital of Ceylon, which is situated in the very centre of the island. About the same period, the Mauritius was attacked; and on the 14th of Janua-

ry, 1820, it appeared at the town of St. Denis, in the Isle of Bourbon, which is only forty leagues south-west of the Mauritius. In July, 1821, it betrayed itself at Muscat, on the southern extremity of the Arabian Peninsula. The neighbouring islands of Ormus and Kishme, in the mouth of the Persian Gulf, were shortly afterward infected: by August it had ascended along the eastern coast of Arabia, as far as the island of Bahrein; and not long after, it entered Bassorah, on the northern extremity of the Persian Gulf. Opposite the little island of Ormus, is the port of Bender-Abassi, in Persia, the principal sea-port town in which the Persians conduct commerce with British India. The Cholera broke out here with so much violence, that the bazaars were closed, and the dead left unburied. Those who escaped its first onset, abandoned their houses, and sought for safety in flight. Shiraz, which is about 100 leagues north-west of Bender-Abassi, manifested symptoms of the pestilence in September, and during the first nine days, 4,500 persons perished. Yerd afterward suffered, and by the time the disease had reached Ispahan, the cold season had so far advanced that its severity was much lessened, and it soon wholly disappeared.

On the recommencement of spring, however, it developed itself afresh, and spreading from Ispahan, where it had wintered, round the contiguous Persian provinces, it visited in succession, Kermanshah, Cashan, Khom, Casbin and Tauris, following, as it invariably did, whether in Asia or Europe, the great commercial lines of national intercourse. At Tauris, 4,800 perished in the short space of twenty-five days, when it left the town, and travelled on through Khaz, Erivan, and Kars, to Erzeroum on the southern shore of the Black Sea. The prince royal of Persia had driven the Turkish army into this town, in the month of July; but immediately after his victory, Cholera broke out with such devastating fury among the Persian forces, that from thirty to forty died daily, and the soldiers became so dispirited that they precipitately retreated, and left the prince with his ministers to sign an armistice at Khoe.

Before the disease quitted Bassorah, in 1821, from 15,000 to 18,000 of its inhabitants were destroyed; and so dreadful was the havoc which it made in the surrounding country, that Dr. Meunier says the third of the population fell before it. At Bagdad it was so prevalent that a Persian army, which was marching against the town, were compelled to withdraw, but were pursued by the pestilence, and among the other losses which it sustained, their commander fell. In the spring of 1822, it appeared between the Tigris and Euphrates; in July it attacked Mosul, which is about sixty leagues north of Bagdad, and then travelling more westward, it passed through Merdine, Diarbekir, Orfa, Biri, and Antab, on its way to Aleppo, in Syria, which it reached in November. During the winter, as usual, it lay dormant, but in the spring of 1823 it revived, and visited Latakia, Antioch, Tortosa, Tripoli, and other towns on the borders of the Mediterranean sea. By the end of July it had advanced in the direction of Sarkin, Arsous, Khankaramout, and the Gulf of Alexandretta; and passing over the high mountains of Beylam, it entered the towns of Adena and Tarsous. In 1824 it appeared at Tiberias in Judea.

Thus have Arabia, Persia, Mesopotamia, and Syria, been overrun by Cholera in little more than two years; traversing every species of country, from the arid deserts of Irac-Arabia, to the succulent banks of the Euphrates, and depopulating almost every village in its path, with a pertinacious obstinacy which human skill was seldom able to overcome. It will be seen that the disease, during this journey, took two distinct routes through these countries, which it prosecuted with equal energy. By the one it penetrated Arabia, attacked Bassorah, ascended the Euphrates, ravaged Mesopotamia, and finally appeared in Syria, where it committed frightful havoc among the towns skirting the Mediterranean sea. By the other it travelled through the very centre of Persia, until, in 1823, it reached the shores of the Caspian.

Early in September, 1823, it entered Astracan, a large and populous town seated on the northern shore of the Caspian, at the mouth of the Volga. The Russian fleet were first infected, but 216 persons were all who fell ill, and of these 144 died. As soon as it became known to the Russian government that Astracan was invaded, they despatched a medical commission, composed of six physicians, to investigate its character; a physician was sent into Persia with the same view; a Board of Health was established at Petersburg, and every exertion was made to prevent its extension farther north. How far such preventive measures were connected with the result, it may be difficult to decide; but certain it is, that the disease got no farther in that direction that year than Astracan, and did not again appear in Russia until toward the close of 1828, when it unexpectedly entered the town of Orenburg, as is supposed by some through the caravans which came from Upper Asia, and by others, through the Kirghis-Cossacks, who neighbour Orenburg, and are said to have been infected by the disease. As the cold season commenced shortly after its appearance, the mortality which it occasioned was not great until the spring of 1829, when it raged with great severity, both in the town and neighbourhood, and entered the forts of Rassypfaya and Isetzk. On the 31st of July, 1830, it again appeared in Astracan; by the 10th of August, 1,229 were ill, of whom 433 died; and by the 27th, no fewer than 4,043 within the town, and 21,268 throughout the province of which it is the capital, perished. After committing this unprecedented destruction, it pursued a north-west course along the banks of the Volga, making tributary to its power the populous towns of Saratoff, Penza, Samara, and Kazan. Kazan it reached on the 5th of September, and on the 26th of the same month its symptoms were first detected in Moscow. The town was immediately divided into forty-seven compartments, which were separated from each other by a *cordon sanitaire*; ten temporary hospitals were erected, and Count Zakrevski, the Minister of Interior, was appointed by the Emperor to superintend these protective arrangements. The Emperor Nicholas himself visited the town when the disease was at its height, and when he left to go to Twer, by submitting to a quarantine of eight days, he gave an example of obedience to the sanatory laws. During the first ten days of October, 747 died; from the 10th to the 20th, 958



perished ; and from the 20th to the 31st, 1,284 sunk under the disease. At first the mortality was as great as nine-tenths ; it afterward diminished to seven-eighths, five-sixths, three-fourths, one-half, and ultimately to one-third. During even the winter months, which had been hitherto a complete specific against its progress, when all the rivers were covered with ice, it carried on its works of death ; but the number who were infected gradually decreased, and the mortality proportionally diminished.

Having now travelled so far north, it was almost universally expected that the Cholera would have soon reached Petersburg, and from thence have extended to the shores of the Baltic ; but the capital, at this time escaped, and the disease, taking an almost opposite direction, accompanied the Russians into Poland. During the revolution of July, in 1830, a body of troops were ordered out of the province of Koursk, in the country of the Cossacks, which was then infected, to march against the Poles. These troops, in their passage through Podolia, and Volhynia, took with them the disease along their entire line of march. The towns of Astrog, Zaslaf, and Luck were infected ; and a few leagues from this latter place the disease passed the Bug, and entered Poland. Lublin was attacked toward the end of March, 1831 ; by the first of April, the hospitals of Siedlec were filled with Russians laboring under the malady ; ten days afterward it was discovered among the wounded at Praga, which is separated from Warsaw only by the Vistula ; and on the 14th it entered the capital of Poland. According to the Central Committee of Health, from 100 to 150 died during the first week, out of every 1,000 sick ; and according to the Berlin Gazette, during thirteen days, ending on the 5th of May, there had been between the town and the camp, 2,580 sick, of whom 1,110 died, and 1,278 still remained under treatment. On the 8th of May, Ostrolenka, Lomza, Szczuczyn, Drohiczyn, Pultusk, Makow, Nesielskal, and Plousk, were ill ; on the 24th it appeared at Polangen ; on the 25th at Riga, and by the 28th, it had reached Dantzic, in Prussia, Brody and Lemberg in Austria. On the 26th of June, the disease entered Petersburg ; early in August, it appears to have invaded Hungary, and by the beginning of September, it had entered Germany, and Vienna.

In this hurried and imperfect outline of the geographical progress of Cholera, we have intentionally avoided to interfere with the narrative, by making any observations on its identity in different localities ; on the peculiarity of its habits in following the great thoroughfares of human intercourse ; on its strikingly progressive mode of travelling, and on the probable causes by which it was influenced in its selection of the course it had taken.

That the Eastern and Russian Cholera are substantially the same disease, every circumstance with which we are acquainted tends to prove. Those, who have witnessed them both, as Drs. Russel, Schnurrer and Riecke, do not hesitate to assert their identity ; and whether we consider their symptoms, their mortality, their facility of propagation, their mode of travelling, their habitudes during life, or their pathology after death, all demonstrate them to depend on the same mor-



bid causes, and to consist in the same diseased action. Their outset is equally instantaneous and alarming; their progress is equally rapid and masterless; their termination is equally fatal and appalling.

In November of 1831, it was transported from the continent to Sunderland, in England, and from thence it spread to London, Edinburgh, Dublin, and many other places in the United Kingdoms. On the 30th of March, 1832, 66 cases of Cholera were reported to have occurred in Paris, the capital of France. From that time the disease increased with the most appalling rapidity.

April 6th, 370 new cases were reported: 7th 509; 8th to the same hour on the 9th 1020, and from the 10th to the next morning 1300. From Paris the disease spread rapidly in every direction, and in a few weeks made its way into 17 departments of that kingdom. In Paris, not less than 15,000 of the inhabitants were swept off by this disease, and it has revisited many of those places again and committed great mortality.

"Scarcely, says a writer, had the Cholera made its appearance in Paris, before news arrived from all the towns and villages in the neighbourhood, to the distance of 200 miles, of the same disease among them; and when it did break out, it was like a sudden and overwhelming flood which swept off hundreds of persons in every situation in life, and in all parts of that extensive city—persons who could have communicated with each other in no other manner than by breathing the air common to all. In the short space of one month more people were cut off by Cholera in Paris, than by the plague of London."

The Malignant Cholera first made its appearance upon this continent at Quebec, on the 8th of June, 1832; previous to its introduction, there were some remarkable features in the season. It was noticed in Canada that an easterly wind prevailed with an intermission of five days only, from the 1st of May to the 10th of June, which in all probability brought the choleric atmosphere from Europe to this country; although the first cases were among emigrants, the situation and state of whom readily accounted for the appearance of the disease in the minds of many. They were in a filthy and crowded condition, and it is stated they were of the lowest description; besides, the Board of Health states that the disease broke out in a low, uncleanly, and ill ventilated part of the city, crowded with the population of those emigrants.

So prevalent and mortal was this complaint, that in two weeks there were *one thousand deaths*! previous to its appearance here, diseases, as well as the season, assumed a peculiar character; the weather was unusually cold, and the influenza very prevalent, and proved fatal to many. During the winter the *scarlet fever* prevailed, and proved very mortal; bowel complaints also appeared, such as common *cholera morbus* and *dysentery* in the very depth of winter, many of which terminated fatally.

The season was throughout very sickly, and the mortality by other diseases great. In the Montreal Herald, for June 9, it is stated that the interments from January 1st to June 6th, amounted to 554 for one

parish only. During the whole winter and spring all diseases manifested the greatest irregularity, and in April infantile diarrhœa was quite common. There was also sickness of an unusual character in the interior of Canada; for in the Canadian of July 16, there is an account, by a "voyageur," of a disease which appeared among the Indians of Schomouchouan, 100 leagues from the sea, which exhibited all the appearances of Cholera. It was attended with vomiting, diarrhœa, and cramps, producing entire prostration in four hours. It was treated with uniform success, by a decoction of equal parts of bark, of white birch and the larch fir, given frequently in small doses. At New London, in Connecticut, a disease prevailed in the early part of the spring, which was quite analogous to Cholera in all its principal phenomena, although it was considered at the time to bear a close affinity to spotted fever, a disease well known in that state. A mode of treatment very analogous to that most approved by experience in cases of Malignant Cholera was also found to be highly successful.

It is also stated by Dr. Elwood, of Rochester, N. Y.,\* that cases of pneumonia in the winter assumed a typhoid form, so that depletion was not admissible, and in which the patients sunk with rapidity — a circumstance which he has rarely observed during a residence of fifteen years in that place. Diarrhœa was very prevalent in Rochester and its vicinity from the first of June, that is, for six weeks previous to the appearance of the first case of Cholera.

It next appeared at Montreal, and for the following facts we are indebted to a report by Dr. Robert Nelson, Health Commissioner of that city. With the month of June diarrhœa showed itself as a common or predominant symptom in every form of disease, and about the first of June there was one case of severe Cholera. But on Saturday the 9th, the malignant Cholera made its appearance as an epidemic. On the evening of that day a passenger was landed from the Voyageur steamboat, sick with Cholera, who died the same evening. It is stated by Dr. Nelson, that during the *same night* several native inhabitants in various parts of the city, *remote from the port and from each other*, and having no communication with the port or place of landing, sickened, and most, if not all of them, died during twenty-four hours. On Sunday, the 10th, another emigrant from the same boat died. From this time it continued to spread, and soon prevailed universally. In two weeks eight hundred persons had died of it. It continued its progress from one place to another, along the river and lakes, "soon outstripping the emigrants," and early in July had reached Detroit.

Without having shown itself at any intermediate spot between Canada and New-York, it appeared in this city about the last of June. The first known case of Cholera in New-York is that of Mr. Fitzgerald, an Irish emigrant, who arrived at Quebec in the autumn of 1831. He resided at Albany from September to May, and on the 3d of May took the first floor of a house in Cherry-street near James-street. He was by trade a tailor, and a steady and temperate man. His wife was also a neat housekeeper, so that in this case neither of the most common causes of Cholera, viz. dirt and intemperance, were present.

\* In Montreal and Quebec, it is stated that about one tenth of the population was swept away by it.

On Monday, June 25, after spending the day at Brooklyn, he returned late in the evening, and was taken sick in the night, but was seen by no physician until Tuesday. In a few days he was convalescent. Early on Tuesday morning two of his children were attacked with the disease, who both died on Wednesday, the 27th. They were seen by many physicians, who considered their symptoms to be those of Spasmodic Cholera. On Thursday, after eating some sour strawberries, the mother was attacked with Cholera, at 12 M. and died on Friday, the 29th.

On the same day an Irishman named O'Neil, was seized with malignant Cholera, and died the next day. He lived in Greenwich, at least two miles from the first cases, and died at the Medical Mansion in Greenwich. He was very intemperate, had been drunk all the week, and had fallen, while intoxicated, into the North River.

On Saturday morning, June 30, a man who lodged with Mr. Hanasy, at No. 15 James-street, was seized with the disease, and died on Sunday morning. He was a temperate man, and was not known to have had any communication with the family in Cherry-street. Another lodger in the same house sickened and died on Sunday. The keeper of the house and several others were subsequently taken sick and died, either there, or at places to which they were removed. They were all intemperate, were drunk at the time, and the house was most disgustingly filthy. On Monday cases occurred in Water-street near James-street, and on Wednesday, July 4, it had shown itself at various places upon the opposite side of the city. From this time cases continued to multiply daily, and all efforts to trace these cases to any foreign source had thus far been wholly unsuccessful.

It subsequently appeared at Albany, and in the New-York state prison, at Sing-Sing, and in many towns throughout the country. It has extended to Philadelphia, Baltimore, Cincinnati, Louisville, New-Orleans, and other places; in the last mentioned place, two or three hundred have perished in a day; many to whom interment could not be afforded were thrown into the water. The habits of the people, and the locality of the place, caused unquestionably this great mortality. It took many off in the space of two hours without any premonitory symptoms, and it is very remarkable that the yellow fever prevailed there at the same time.

#### CAUSES.

1st. *Remote Cause.* Whatever diminishes the tone of the system, operates as a remote, or predisposing cause of the Cholera, such as the depressing passions, great fatigue, change of air, derangement of the digestive organs, intemperance, drunkenness and excess in eating, sudden transitions from heat to cold, exposure to the night air, licentiousness, and in short, every deviation from universal temperance; but perhaps nothing sooner produces an attack of Cholera than the use of crude fruit and vegetables of every description, as well as every article that readily yields an acid by fermentation.

Low and damp situations, either as regards the quarter of the city,

or the part of the house occupied, local filth and dirt, either of premises or persons. Those who are subject to diarrhœa are very liable to an attack of Cholera. Licentiousness and debauchery are great predisposing causes of the complaint. Debility occasioned by watching over persons sick with the disease, often brings on an attack. Breathing stagnated, or unventilated air, also powerfully predisposes to the complaint, and residing in low, damp situations, such as cellars.

Alderman Palmer of this city, who visited much among the Cholera during the late epidemic, states, that three-fourths of those who were attacked with the disease, resided in cellar kitchens, and houses situated back from the street, where there was very little circulation of air, and most of the cases which we treated at the 10th ward Medical Station inhabited similar places and situations, while those who resided in large and airy houses were nearly exempt from the disease.

Marsh effluvia, or the air arising from low, marshy places, contributes much to the production of this disease. Hence it would sometimes suddenly spread from a city even to country places, and towns where the intermittent fever is usually prevalent. This has usually been the case in every part where it has prevailed.

But of all the predisposing causes, *intemperance*, and *drunkenness* are unquestionably the greatest. It seems, as it were, to have been sent as a special scourge to this unfortunate class of men, and this is readily accounted for, from the morbid state of the liver and stomach which ardent spirits produce. It appears to render these organs altogether incapable of resisting the poison of this contagion; hence the victim sinks immediately under it.

Testimony, to the like effect, has been borne with wonderful unanimity, by all the writers on Cholera, not only in India, but in China, Persia, Russia, Poland, Germany, and England. The disease was most widely disseminated, and most deadly in its effects, among the serfs of Russia, who live in the extremest filth, and in habits of beastly intemperance. The houses in which the disease occurred in Moscow, were inhabited by a class of persons extremely poor, habitually filthy, and addicted to intemperance, and who lived in low and damp houses, and in cellars. Many of the chambers only nine feet square, were occupied each by thirty individuals.

Every where in Europe, say the best authorities on the subject, the poor, the ill fed, and the ill clothed, and the intemperate, have been the greatest sufferers.

The Russian physicians have also adverted to the agency of bad and indigestible food, in the production of Cholera in that country. This is distinctly admitted in the precautionary instructions issued by the Russian and Austrian governments, and by the medical boards in Berlin and Hamburgh, respecting the articles to be shunned as food—they are unripe and watery fruits, beer, hydromel, sour soup, mushrooms, cucumbers, and melons, sallad, and spoiled fish, and greasy food generally. The sale of cucumbers and watermellons, which were peculiarly abundant in the fall of 1829, was prohibited by the magistrates at Orenberg.

In every place in the United States where the Cholera visited, the



mortality among the intemperate and the drunkards was truly appalling. Although they were the first to trifle with the complaint, they were its first and most sure victims; and it is a remarkable fact in the history of this epidemic, that those who disbelieved in its prevalence, and even ridiculed its approach, were the first and most striking examples of its fatality. But while we have to state the dreadful ravages among this class of men, truth constrains us to state, that it attacked many that were strictly temperate in every respect. But this peculiar feature of the complaint, seemed to be more marked in some places than in others.

Similar causes have been assigned for the disease also in Europe. It has been stated on good authority, that in *ninety* cases in a hundred, in St. Petersburg, the common victims to Cholera were the irregular, the dissipated, those with broken constitutions, and impaired health, the badly fed, the badly clothed, and those who indulge in intoxicating liquors.

In London, the places where the Cholera raged were the haunts of poverty, wretchedness, and vice, and its victims were the half-famished and intemperate inhabitants of these situations. These constituted the fuel which the all pervading flame selected as the victims of its rage; and wherever they were located in numbers, there the disease prevailed.

In Paris, however, it prevailed among all classes, the rich as well as the poor.

Among other causes which might be mentioned, are first, certain agents taken for medicine, such as calomel or mercury, any of the neutral salts, rancid castor oil, bleeding, and most of the medicines ordinarily prescribed. Drastic purgatives of any kind have been found to bring on the complaint.

"We may add to these agencies," says a physician of this city, their crowded, close, and unventilated habitations, which have constituted a confined and locally infected district, in which the prevailing epidemic exerted a greater activity, and carried off many victims. This has been witnessed at 450 Cherry-street, where fifteen who died of Cholera were taken from one alley; and in Stagg's Row, in Delancy-street, where forty-three others fell victims to the disease.

*Intermediate cause.* We have now spoken of the remote, or predisposing cause of the complaint. I shall next speak of the intermediate cause or causes, and which, to me, appears to consist in the agency or influence of a deleterious gas or effluvia mixed with the atmosphere, and this extends over whole districts of country, showing its effects just in proportion as it finds materials to feed upon.

In country places where the air is generally pure, and where there is little or no marsh miasmata, this deleterious state of the atmosphere manifested itself by generating only the premonitory symptoms of cholera, such as nausea at the stomach, derangement of the bowels, &c.; but in those places where there is a large population, filth, unventilated apartments, and other predisposing causes, the Malignant Cholera becomes developed in all its features. Hence it appears that when the epidemic visits the country, the inhabitants as well as in the

city breathe the pestilential air alike, and nothing is wanting but some exciting cause to develop its character, and which so fully exists in all our dense populous cities, for which reason it usually prevails in them almost exclusively. "If the state of the atmosphere over the world, at any one time, is equally vitiated by some unknown cause, its effects will first appear in places where that state of air is most powerfully aided by local vitiations, as in cities or marshy grounds."

In other places, the exciting causes do not exist, or are not sufficient to bring on an attack of the complaint. The intermediate cause, then, of cholera, is a malaria, or a poisonous gas or gasses floating in the atmosphere, inhaled by the lungs mixing with the blood, and contaminating it with a specific poison.

*Proximate cause.* The proximate cause of this disease consists in an effusion of this *poison* which has been *secreted* from the *blood* through the medium of the *liver*, and is thrown upon the *stomach* and *intestines*, which by its *poisonous quality* causes an *irritation* and *inflammation* of the *mucous membrane of the alimentary canal*; and which is proved by dissection. That the *immediate or proximate* cause is a poison admits of no doubt; but of the nature of it, we are not prepared to state precisely. It may be a peculiar acid somewhat similar to that which causes the common cholera morbus, but more deleterious or powerful. It appears to lodge in the *gall bladder*, the structure of which is such that it remains in it for some time with impunity, seldom or never causing the complaint, except there be a preternatural effusion of it by some of the secretions becoming closed, or by relaxation or debility occasioned by fatigue, drunkenness, or some other predisposing cause.

Thus, if I mistake not the contents of the stomach and intestines, will immediately turn the tincture of litmus red, which appears to show the existence of an acid. Be this as it may, we are confident that a most *deadly poison* is thrown into the stomach and intestines which produces all the symptoms of the disease. This may be proved conclusively by analogy. Certain kinds of fish, when eaten, produce almost the same symptoms as the spasmodic cholera, one kind of which, the yellow bill sprat, possesses a poisonous virus almost incredible, and has, in several instances, been known to destroy life by exciting dreadful convulsions.

The Conger eel, and the large white land crabs that feed upon the leaves of the machineel tree, are poisonous, and produce violent Cholera.

Certain and rapid death is almost sure to ensue from eating the yellow-bill sprat; but from a use of most other kinds of poisonous fish, the person is seized, after a few hours, with languor, heaviness, and faintness, succeeded by great restlessness, flushings in the face, giddiness in the head, cardialgia, nausea, griping pains in the bowels, and a severe vomiting and purging.

Under the supposition that the poisonous quality of the fish before noticed is occasioned by their feeding on the moss which grows on copperas banks, a late writer on the subject tells us, that in the treatment of such cases during his residence in the West Indies, his object

was to decompose the poison; to effect which, he almost entirely depended on alkalies in simple solution with water.

Here then says a "physician, we have a disease whose symptoms not only, but whose effects prove to a moral certainty the existence of a highly deleterious and morbid secretion in the first passages of the alimentary canal—that this morbid matter is of an acrid and viscous nature, producing a painful, griping, and spasmodic action in the intestines, and, in proportion to its intensity, calls into sympathetic action the muscles of the abdomen and of the extremities. This secretion is sometimes so acrid, and of so poisonous a nature, that its effects on the system bear a strong analogy to the effects of arsenic. Physicians have often mistaken the symptoms of poison by arsenic for cholera morbus; and I distinctly recollect that in the first case of poison by arsenic to which I was called, unsuspecting of the cause, I thought it a case of Cholera, and I sat by the bedside of the patient several minutes before the suspicion of poison entered my mind."

It was this strong analogy in the respective symptoms of Cholera and mineral poison that undoubtedly excited the suspicions of the people of Paris that their waters and liquors had been poisoned with arsenic.

Some considering the blood as the natural principal, and general *stimulus* of the organic fibre, and consequently as the principal cause and effect of all the vital movements, have attributed the morbid process to the want of oxygenation in the blood, which thereby losing its faculty of natural *stimulus*, produces, like narcotic poisons, that which is called *asphyxia* of the heart; and they therefore propose the use of oxygen as a remedy.

## SYMPTOMS.

### FIRST, OR INCIPIENT STAGE.

"The intestinal irritation, which I have distinguished as the first stage of Cholera, has been usually regarded in no higher light than a premonitory symptom; and to this neglect is to be attributed the little success which has attended the treatment of the disease. It is true, the London central board of health laid it down as a certain precursor of Cholera, and gave the most public announcement of the fact, calling upon those affected with diarrhœa to have immediate recourse to medical treatment. But being only regarded as a premonitory sign, and not as the *first symptom of the true Cholera*, it produced little effect on the minds of the people. When the Cholera made its appearance in Sunderland, the cases of diarrhœa were separately noticed in the reports sent from the local to the central board of health, and subsequently were altogether struck out. Whether they were afterward included under the general head of "*mild Cholera*," or totally disregarded, I cannot say; but little, from that time until the disease appeared in London, was said upon this subject."

This stage commences with looseness of the bowels, more or less severe, according to the habits and constitutional disposition of the patient. At first the evacuations are deeply tinged with bile, but gradu-



ally the fæces undergo a very marked change, become colourless, and very much resemble thin gruel or rice water.

The diarrhœa is noticed as a common preliminary symptom, though for a long time presenting no peculiar character distinguishing it from the complaint denominated simple diarrhœa; yet the dejections are in many instances from an early period more fluid, whiter, and less feculent than they usually are in that disease; and *generally*, toward the advance of the true choleric symptoms, these evacuations assume the peculiar rice water character.

In some instances, during this stage of the complaint, there are slight indications of the symptoms which are to follow: nausea, proceeding even to vomiting, and slight trembling of the muscular fibres in various parts of the body, attended with loss of appetite, dejection of spirits, general debility, and giddiness.

There are cases noticed, in which this diarrhœa was not observed as a precursor of the second and more alarming stage. In others it has commenced at night, and before morning the disease in its most aggravated form has prostrated all the vital powers of the unfortunate sufferer. But these exceptions are not sufficiently numerous to invalidate the rule; and I lay it down as a settled position, that *the generality of cases are preceded by a relaxed state of the bowels*. The importance of this observation will appear, when I notice the proper sanative measures to be adopted for the prevention and cure of the disease.

“The best writers on Cholera Asphyxia, generally agree that it is invariably preceded by the following symptoms:

“The patient complains of lassitude and a partial uneasiness in the region of the stomach, accompanied with some slight evacuations from the bowels, insufficient however to excite his attention or alarm. As these symptoms increase, and the evacuations become more frequent, from two to twelve times a day, accompanied with increased griping, his countenance becomes sharp and dark, of which he seems to be perfectly unconscious. Occasional nausea sometimes appears at this period. These symptoms generally continue, varying in severity, from one to ten days before the second stage supervenes. The evacuations at first are of a dark brown or blackish hue. As the looseness continues, they become of a less natural appearance, until they assume the consistence and aspect of dirty water. Some headache, cramp of the fingers, toes, and abdomen, slight giddiness, and ringing in the ears, accompany these symptoms. Sometimes a costiveness of two or three days’ duration supervenes, which is immediately succeeded by a return of the diarrhœa, and in a few hours after by a collapse of the whole system, with nausea and vomiting.”\*

\* The epidemic had a peculiar effect upon almost every individual, and proved most conclusively that there existed an impure and pestilential state of the atmosphere. Most of the citizens were affected with diarrhœa, or a derangement of the digestive organs. It had a peculiar effect also upon *my own* system. It appeared that the blood became charged with the poisonous effluvia, but for the want of some exciting or predisposing cause, the disease was not brought fully into action, but was carried off by the excretions. Notwithstanding which, in consequence of certain kinds of diet once or twice indulged in, such as beans, peas, &c., very strong premonitory symptoms mani-



This stage, continuing for a longer or shorter duration, is suddenly terminated by the accession of symptoms of a more alarming character, usually denominated the proper Cholera, but which I consider as the second stage of the disease.

#### SECOND, OR CONFIRMED STAGE.

The diarrhœa, which had perhaps scarcely been noticed by the patient, becomes suddenly more severe, the evacuation thinner, and more colourless. The stomach, which up to this moment has remained undisturbed, or but little affected, now becomes very irritable, and throws off first its contents, mixed with food, and at length, like the evacuations from the bowels, colourless and of watery consistence. At the same time, the strength of the patient becomes as suddenly depressed, which is indicated not so much by his feelings, as by the lowness and almost imperceptible pulsation of the heart and arteries. The urine is suppressed, the voice weak and hoarse, the respirations few, the breath chilled, and the tongue shrunk and of icy coldness, attended with great thirst, the skin cold and covered with a cold and clammy moisture; the countenance is shrunk, the eyes glassy and sunk in their orbits, and the features pinched, and exhibiting the most painful and anxious expression. The muscles in various parts of the body are now affected with cramps, rather than spasms. They are drawn up in knots, and their fibres are seen trembling under the skin. The muscles principally affected are those of the extremities, the calves of the legs, the flexors of the fingers, and the abdominal muscles; but there are *twitches* of the muscular fibres and tendons in every part of the body. These cramps have been described by patients themselves, as uncomfortable rather than painful; and the generality of the cases I have seen have not appeared to suffer much from this cause.

In this stage there is little or no livid hue to be noticed. There may be a darker circle under the eye, and the nails may be a little discoloured.

I have given the symptoms of this stage of the Cholera in the order in which they usually occur. Some may occasionally be absent, or more or less aggravated; but generally all are to be found occurring simultaneously.

fested themselves. On one occasion after eating beans for dinner, nausea, retching and some vomiting supervened, with great debility; and which was removed only by a copious perspiration. On another occasion, after having eaten certain vegetables, similar symptoms followed. At several other times from fatigue, or some other cause, I became very much indisposed, and was confined to my bed for some time with a most distressing nausea, or sickness at the stomach, with great prostration of strength, flatulence, slight cramps, twitchings in the flesh, with great contraction of the abdominal muscles, derangement of the digestive functions, and a most depressing nervous debility.

Those periods seemed to occur at stated intervals, about once in three or four weeks; and they apparently proceeded from a preternatural collection of choleric poison, generated in the gall bladder; which was suddenly effused upon the stomach and intestines in consequence of fatigue, or some error in diet.

## THIRD, OR COLLAPSED STAGE.

The preceding stage of the disorder is seldom of long duration, either yielding almost immediately to the prompt application of medicine, or terminating in a few hours in the more concentrated and intense stage of the malady, when all the symptoms are fearfully aggravated, with the exception of the purging and vomiting, which entirely cease, or are greatly suppressed. The countenance now has that peculiar expression, denominated *facies hippocratica*; the youthful plumpness yielding in the space of a few hours to the violence of the shock, is succeeded by the shrivelled physiognomy of old age and disease; the complexion assuming at the same time the peculiar blue or leaden colour, which has been considered the characteristic mark of true Cholera.

From this stage, which has been denominated the state of collapse, but comparatively few recover. "Indeed I think," says a writer, "I should not much err by asserting, that when the patient is brought to the low and depressed condition I have above described, his state is utterly hopeless; it is in fact the *dying stage of Cholera*." Many patients do recover, however, even in this stage of the Cholera.

These three stages, though perfectly distinct and clearly observable in most cases, are nevertheless, in other instances, so suddenly overpowering in their invasion, and terminate with such alarming rapidity, as to set all efforts of discrimination at defiance. The vital powers explode like the electricity of the Leyden phial; the strong holds of life are in one moment laid prostrate; and the patient who one moment ago seemed in the flower of youth and vigour of health, is in the next a cold, shrivelled, and ghastly object, having nothing in common with a living being, but the slow heavings of respiration and a countenance expressive of the most unutterable anxiety.

## FOURTH, OR STAGE OF REACTION.

If there is any shade of difference between the Asiatic Cholera and the disease now raging in Europe and America, it is the presence of this phenomenon in the latter, and absence in the former. A great handle has been made of this discovery, by some who deny the identity of the two diseases; and the presence of fever subsequent to the cold and collapsed stage has disposed others to conclude that this epidemic is only a severe form of typhus fever.

Even should it be found that the premises from which the former conclusion is drawn are correct, there would not be in the mind of an unprejudiced observer sufficient ground to justify the inference.

The occurrence of an occasional effect, arising from a cause super-added to, but not a necessary part of, any physical phenomenon, is not sufficient to destroy the identity between cases in which this consequence may or may not be present. Circumstances totally unconnected with the proper causes of disease may nevertheless so qualify and alter the symptoms, as to render the diagnosis, if not impossible,

at least difficult; and in all climates, every physician is aware of the effect produced upon the character of disease by constitutional idiosyncrasy, or temperament.

In India, according to the authority of Dr. James Johnson,\* consecutive fever, or reaction, is never observed; while, from the reports of the British commissioners appointed to investigate the nature of the disease in Russia and Poland, this phenomenon invariably follows a recovery from the state of collapse. Some of the reports of the Indian presidencies, in the discussions given, make no mention of consecutive fever; and it is ascertained to be a fact that the natives of that country, when recovering from Cholera, are not affected in this manner. But among the British soldiers and European civilians, there is every reason to believe, from the statements of those connected with the British army, that this phenomenon is a common occurrence.

Whatever may be the case in India, it is certain that since the complaint has made its appearance in Europe and America, consecutive fever has invariably been noticed. The report of Drs. Russel and Barry gives the phenomenon in the following words:

"*Fever, or hot stage.* After the blue cold period has lasted from twelve to twenty-four hours, seldom to forty-eight hours or upward, the pulse and external heat begin gradually to return; headache is complained of, with noise in the ears; the tongue becomes more loaded, redder at the tip and edges, and also drier. High colored urine is passed with pain in small quantities; the pupil is often dilated; soreness is felt on pressure over the liver, stomach, and belly. In short, the patient is labouring under a continued fever, not to be distinguished from ordinary fever. A profuse critical perspiration may appear on the second or third day, and leave the sufferer convalescent; but much more frequently the quickness of pulse and heat of skin continue; the tongue becomes brown and parched; the eyes are suffused and drowsy; there is a dull flush, with stupor and heaviness, about the countenance, much resembling typhus; dark sordes collect about the lips and teeth. Sometimes the patient is pale, squalid, and low, with the pulse and heat below natural; but with the typhus stupor, delirium supervenes, and death takes place from the fourth to the eighth day, or even later, in the very individual too whom the most assiduous attention had barely saved in the first, or cold stage. To give a notion of the importance and danger of Cholera fever, a most intelligent physician, Dr. Reimer, of the Merchants' Hospital, informs us, that of twenty cases treated under his own eye, who fell victims to the disease, seven died in the cold stage, and thirteen in the consecutive fever."

#### SYMPTOMS OF THE DISEASE, AS THEY OCCURRED IN THE N. Y. HOSPITALS.

A superintendent of one of the New-York Cholera Hospitals, thus

\* Letter to the "Times," morning journal, paper published by the Privy Council of Great Britain, in the appendix.



describes the symptoms, as given by the author of the New-York Cholera Reports.

"The Malignant Cholera appears to be a violent disease of the *primæ viæ*, or stomach and intestinal canal, into which the fluids of the body are turned; and the discharges, therefore, both upward and downward, though not always attended with pain, if left unheeded, bring on that stage of the disease which has been denominated the *state of collapse*; in which the countenance changes, the eyes express a peculiar sensation of anxiety, the pulse sinks, the extremities become cold, the fingers corrugated, a cold clammy sweat supervenes, cramps attack the extremities, the voice fails, and a cold breath, and cold tongue, give indications of extreme danger, and of a speedy and fatal termination to the disease.

"*Premonitory Symptoms.*—The violent forms of the disease are most usually preceded by forewarning, or premonitory symptoms of a milder character, which, in ninety-nine cases out of a hundred, may be cured; but if neglected, may suddenly and unexpectedly advance to a more dangerous stage of the disease, and terminate fatally. The most usual of the premonitory symptoms are simple looseness of the bowels, with or without pain, and which sometimes continues several days, though at other times only a few hours, without becoming dangerous. Borborygmi, or rumbling in the stomach and bowels, with pain or sickness at the stomach, sometimes occur as premonitory of Malignant Cholera; and they precede vomiting, or looseness of the bowels, or both.

"*Essential Symptoms.*—The essential symptoms of the epidemic Cholera, as they occurred to the observation of the subscriber, are purging, or puking, or both. Vomiting sometimes occurs as the first symptom, but the disease most usually commences with evacuations from the bowels. These may be, in the commencement, the natural contents of the intestines, or in vomiting, those of the stomach. But in the progress of the malady, the discharges, up and down, become copious and thin, with little or no fœtor, and often without pain, looking like dirty water, or the washings of dirty rice, and containing portions of flocculent matter, as though the fibrins of the blood were separated into shreds, and floating in the watery mass. When these loose evacuations from the bowels become involuntary, the patient sinks without a hope of recovery.

"The vomiting may be moderate, and yet the patient die from the copiousness of the other evacuations, and the violence of the cramps which occur in most of the fatal cases. The irritability of the stomach is sometimes very great, attended with distress, pain, burning heat and thirst, when the desire for cold drinks is urgent, and they are rejected soon after being swallowed, with additional quantities of fluid. In such cases other drinks or medicines produce the same effect.

"Cramps attend some of the milder cases, and are not necessarily fatal. They occur most usually in the extremities, sometimes in the stomach and external parts of the body. When violent, they keep the patient in agony until the strength is exhausted, and the sufferer sinks into a state of torpor and death. Some have passed into the stage of



collapse and died without cramps, remaining for some time in a state of cold insensibility denominated the Cholera Asphyxia.

"*Premonitory symptoms do not always occur.*—Premonitory symptoms are sometimes wanting, but such cases are not numerous, and the patients are then attacked with violence, from the operation of some exciting cause, and the disease runs rapidly its fatal career. A few such cases have been admitted into the hospital at Corlaer's Hook."

"When the Cholera is left to itself," says a practitioner, "or even where it is treated in the beginning with improper remedies, it is almost incredible, to those who have not seen it, how rapidly it runs its course to a fatal termination; but it is equally incredible, when the disease is properly treated, how very soon it may often be arrested in its rapid progress. I have seen, in some of the very worst cases, where, when a few doses of medicine could be retained in the system for a sufficient time to enter the circulation, the fatal symptoms were almost immediately arrested; and even when the collapse has commenced, after a short period, the pulse can be felt beginning to creep, animal heat begins to be evolved, and though the patients continue weak for a time, yet they gradually recover from the state of collapse."

"In two of the most malignant cases which I have seen, there was no premonitory diarrhœa; and in one of them the bowels had not been open for three days previous to the attack: consequently, Cholera is not merely an excessive diarrhœa, for neither the bowel complaint, the rice-water ejections, vomiting, nor cramps, are essential to this disease; and where these symptoms do exist, they are merely the effects of the poison, for they are merely accidental; but *a sudden coldness of the blood, and of course of the whole body, without any obvious cause, is, perhaps, the best characteristic symptom of this pestilential disease.*

"In the first stage of Cholera, the ejections are, in general, passed with great force; but as the disease advances, the intestines become cold, and frequently so torpid, that even hot clysters can be retained with great ease: consequently, in such cases, there is no necessity for plugging the rectum, as recommended."

"The rice-water ejections, which are generally passed so copiously in the first stage of Cholera, are, like every other secretion in the body, derived entirely from the circulating current: and as the colouring matter of the blood is, perhaps, the only ingredient which is not drained off in this way, it naturally follows that a given quantity of black Cholera blood must be more dense, and contain more colouring matter and less serum, than is met with in the red blood of a healthy person.\* It is also a fact, that the arterial blood contains less air:

\* The following are the proportions between healthy blood and that in Cholera, as given by Dr. Thomson.

In the former,				Cholera blood.			
Serum,	-	-	55	Serum,	-	-	32.34
Crassamentum,	-	-	45	Crassamentum,	-	-	67.66
<hr/>				<hr/>			
100				100.00			

there is also less carbonic acid in the venous circulation, as was ascertained many years ago by Dr. John Davy.

"We have seen that, in the early stage of Cholera, the contents of the stomach and intestines are ejected from the system with great force. This sudden and forcible contraction is probably caused by the poisoned or acrid quality of the secreted fluids, which are in this way removed from the body. The urine which is secreted at this period is also expelled with considerable force, even though it is not secreted in such quantity as to stimulate the bladder by distension; and this firm contraction of the bladder, even on the last drops of the acrid fluid which is expelled, is probably the chief cause why this organ is so firm and contracted after death.

"We have seen that animal heat is generated and evolved in the extreme texture all over the body, consequently, every thing that increases the action of the extreme vessels adds to the quantity of animal heat. It is for this reason that I consider frictions with hot, dry flannel, but particularly the application of large sinapisms to various parts of the body, useful."—(*A. Smith.*)

#### DIFFERENCE BETWEEN COMMON CHOLERA MORBUS AND MALIGNANT CHOLERA.

These are both affections of the stomach and intestines, and may therefore be considered as modifications of the same disease; but nothing like the late epidemic and Malignant Cholera has occurred in this country. Several cases of cholera morbus of great violence are related in the medical journals,\* as having heretofore occurred in this country as parallel to those of the late Epidemic Cholera; but as they are few and solitary, they must be considered as sporadic cases of extraordinary malignity.

The common cholera morbus prevails annually, most usually in warm seasons, during the months of July, August, and September, and is attended with puking, purging, and griping pains in the stomach and bowels. The evacuations are bilious, and the vomiting of green bile is evident to the sight and taste of the patient.

In the Malignant Cholera, bilious discharges are wanting; and the evacuations up and down are thin and watery, and without fetor, although there may be food and feculent matter in their commencement. The liver and kidneys appear to be torpid in their ordinary secretions, while the fluids of the body are determined to the intestine canal, and ejected up and down in the form of dirty rice-water.

Cramps attend both forms of disease, but they are more violent and fatal in the malignant form.

The Epidemic Cholera generally commences with mild symptoms, and suddenly changes its character, running into a state of collapse, often attended with cramps, though sometimes not.

The common cholera morbus commences with violence, without

\* See Bushe's Med. Chirurg. Bulletin.

premonitory symptoms, and seldom or never terminates with the symptoms of the last stage of the malignant form.

#### DIAGNOSIS OR DISCRIMINATION.

On this point I think it sufficient to refer to the symptoms and appearances which I have described as characteristic of the cold stage. These are so marked that I think it almost impossible to commit a mistake on this subject.

#### PROGNOSIS.

When the characteristic symptoms of the cold stage are all present in a considerable degree, the prognosis is more unfavorable. Of the intensity of the disease, perhaps the cold, as a single symptom, is the best index. Recoveries are very rare of cases in which the respiration is perfectly cold. Copious perspirations in the cold stage are fatal. Complete stupor and total deafness are always fatal. Of the evacuations, the brick coloured, and after them those of a fish odour, were of the most unfavourable omen, and very generally fatal; the green stools denoted a great danger. Bile appearing in the matters purged or vomited was a favourable sign. The return of warmth to the surface, without a *copious* clammy perspiration, the diminution of its discoloration, and of the decomposition of the features, justify an increase of the hope for a favourable issue. When the resources of art are at hand at the moment of explosion, we may generally anticipate a termination in health. Advanced age, or a dilapidated constitution, renders the prognosis very unfavourable. Between the age of puberty and twenty years, the prognosis is generally favourable. Youth and a good constitution are *very favourable* to a fortunate prognosis. The return of the urinary secretion (which occurs only after reaction is established) is of very favourable omen: also a breathing perspiration, with a return of the healthful secretions of the mouth. Swelling of the glands is very rare, so much so, that I am unable to form any prognosis therefrom. I have seen epistaxis in only three; it was slight; they all recovered. Pregnancy was unfavourable. Four pregnant women were received at Necker Hospital. They all aborted; three died, one recovered. Of five who gave suck, three recovered and two died. But it is useless to dwell on this subject, as our prognosis must be formed from the *ensemble* of symptoms, and not from single ones separately viewed. *Smith.*

#### REMARKS AGAINST CONTAGION OR INFECTION.

*Contagion.* I had intended, says Smith, to consider this question, or fact—for I conceive it now put beyond controversy—at great length, but it would occupy more space than I am willing to allot to the subject. My opportunities for observation have been great, and I have had the contagiousness of the disease at all times in view. I have collected a mass of facts, many of which fell under my own ob-

servation, others were communicated to me by my friends : not one of them goes to establish the contagiousness of Cholera.

“ As this subject requires for its full elucidation minute and tedious details of facts and circumstances, and as the few for which I have room at present would, from their small number, be insufficient to decide so important a point, I reserve the whole, to be presented in a digested form, if it should hereafter appear to me worth while. I will, however, mention a very few facts of a general nature, bearing on this subject. Immediately on rising from my bed, to which I had been confined a few days by some severe choleric symptoms, occasioned by a change of diet, I resumed my duties in the hospital. For weeks in succession I spent a considerable part of the twenty-four hours in the choleric wards, examining the patients, performing very frequently the offices of a common attendant, inhaling the breath of the sick and dying. I passed some hours every day in the dead room, making *post mortem* examinations, breathing the exhalations from the dead bodies. I wounded myself, by running spicula of bones into two of my fingers; and notwithstanding the great liability to relapse, I enjoyed good health. The Sisters of Charity at Necker Hospital, who remained for months in succession, nearly all the time not devoted to sleep, in attendance on the Cholera patients, I believe all escaped any severe choleric symptoms. The hospital is situated in one of the streets ravaged with the greatest fury. Almost all the medical men of Paris agree in the opinion that Cholera is not contagious: this unanimity is of more weight, when we consider that this is almost the only question pertaining to Cholera on which they accord. The surgeons and physicians of Hotel Dieu, of St. Louis, of la Pitié, and some other hospitals, have declared this opinion in the public journals. The disease appeared in Paris first in a part of the city least in communication with strangers, and *before the disease existed in any other part of the kingdom*. The French physicians sent to Poland, are of opinion that it is not contagious. At Greville-street hospital, in London, which is exclusively appropriated to cholériques, and situated near the middle of the city, I was told that not an individual employed in the hospital, or in any way connected with it, had been attacked.

“ In the absence of known causes, I have adopted the belief that cholera is produced by some general, constitutional state of the atmosphere in those districts where it prevails. It is true that eudiometrical experiments throw no light on this point; but this fact militates as strongly against the existence of miasmata in general. No eudiometrical changes are discoverable in the air of wards crowded with cholériques.

“ Nothing can be expected from quarantine regulations, for, as if in mockery of them, the cholera leaps over the sanitary cordons enforced by an European police.

“ It would be curious to trace several striking analogies, with some dissimilarities, between the Spasmodic Cholera of the old world, and the spotted fever of our eastern states, or the “cold plague in the bowels” of our southern states. Some cases of adynamic fever, which Drs. Latham and Burrows were kind enough to show me in their wards at



St. Bartholomew's Hospital, presented the same symptoms as I have seen in some cases of spotted fever in the eastern states of our own country. So complete is the resemblance, that I feel confident that the disease I saw in London is identical with that which has prevailed epidemically on the Connecticut River at different times, as I am informed, since 1805 or 1807. These gentlemen told me, that fevers of this type have been of common occurrence at London for several months, *i. e.* coexisting with epidemic cholera. These facts I think interesting, as they show a somewhat similar epidemic constitution of the air in some parts of our country, and in some of those countries where cholera now prevails.

"I saw a cholérique whose body was covered with small well defined petechiæ, extending to his thighs, while these, as well as his arms and legs, presented large patches of diffuse lividity."

Dr. Zoubkoff, of Moscow, (Russia,) it appears, had been a firm believer in contagion, until the prevalence of the disease in that city. He tells us, (p. 10,) that in the hospital (Yakimanka) he saw, "to his great astonishment, that all the attendants, all the soldiers, handled the sick, supported their heads while they vomited, placed them in the bath, and buried the dead; always without precaution, and always without being attacked by the Cholera." He saw that even the breath of Cholera patients was inhaled by others with impunity. He saw that throughout the district of which he had charge, the disease did not spread through the crowded buildings, or in families where some had been attacked; and that exposure to exciting causes determined the attack in many instances. He saw all this, gives the public the benefit of the copious notes which he made of details as to persons, places, &c., and now ridicules the idea of contagion in Cholera.

A very large majority of physicians and surgeons of India are decidedly of the same opinion; their observations led them to the following inferences:

1st. That medical men, hospital assistants, &c. were not more liable to take the disease than the rest of the community; in many instances less so.

2d. That it was not communicated by the clothing and beds of the sick to healthy subjects, or even to those labouring under the disease.

3d. Regiments, marching from one station to another, get it all of a sudden, on reaching a certain spot, and the disease as suddenly disappears in a day or two, after changing their ground.

4th. It appears suddenly in a place, continues a week or two, and as suddenly disappears.

5th. Particular parts of a station, or camp, are attacked in preference to others, when the communication is unrestricted.

6th. Banks of rivers and water-courses are more obnoxious than high and dry situations.

7th. On a change of the weather, the disease is sometimes arrested.

8th. The disease passes by intermediate towns and villages, and seizes on more distant ones; a fact inexplicable on the principle of contagion.

9th. Seclusion from, and non-intercourse with, the infected, seldom or ever afford security against the disease.

"Instances of entire immunity, after constant intercourse with the sick, say Condee and Bell, might be greatly multiplied, both in India and Europe.

"The women who washed the clothes of the patients in the hospital at Orenberg, were entirely exempt from the disease. A like immunity was enjoyed by the attendants who helped the patients in and out of the bath, rubbed their bodies, dressed blisters, &c. in different Russian and other hospitals.

"The physician general to the town hospital of Dantzic says, that there were five waiters always near the patients; eight men were employed in rubbing and bathing; nine medical men visited the patients, of whom one was always in the room in the day time, two watching every night; no one of these twenty-two persons fell ill.

"I have visited," says Dr. White, "the Gateshead hospital, during the time I had the honour of being physician to that institution, under all circumstances of physical depression. I have breathed the atmosphere of its apartments for hours together; yet I, the attendants, the nurses, all equally exposed, have equally escaped. Not a single individual in the profession has sustained an attack since the disorder has prevailed."

#### REMARKS IN FAVOUR OF CONTAGION OR INFECTION.

Jonnes asserts, that the Cholera was brought to Muscat, in Arabia, by the English East Indiamen; and Dr. Salinas reports that it was a vessel bound from India, which in 1821 carried this plague into the port of Bassorah, from which it spread from town to town, even to the coast of Syria. Almost every authority, which we possess upon the point, declares that the Cholera reached Astracan by a brig which came from Baku, on the western coast of the Caspian sea. Baku was unhealthy when the brig sailed; she lost eight of her crew upon the voyage, and Cholera first appeared in Astracan a day or two after her arrival in the Lazaretto, to which the sick of the vessel had been brought. The following extract from the pen of Dr. Solomov is rather long, but it bears so strongly on the present subject that we cannot refrain from laying it before our readers. Dr. Solomov is a staff physician, settled in Astracan; his statements, like all other statements, must be taken as coloured necessarily by his opinions. "After the 27th July, it attacked the suburbs, then the nearest villages, and then gradually extended over the whole government. After the 29th, it proceeded through the Cossac stations, and the town of Enotaevsk on the high way to Moscow, up the stream of the Volga; its extension in this direction evidently accompanied the fugitives from the places successively attacked. In the town of Enotaevsk it spread with the arrival of a sick boor; on the 29th, a barge arrived at Tchernojar, 150 miles up the Volga, with several rowers on board, who were ill of the Cholera. On the 8th of August the disease began to prevail among the inhabitants, then passed across the river among the neighbouring

Kirghis, as well as upward to the villages of Solodnikovsko and Vaisoka; in one of which the first attacked was a military prisoner, who had been exposed to the disease. On the 25th of July, the epidemic also began at Krasnojar, situated on the northern mouth of the Volga, twenty miles from Astracan; and it first seized a private of invalids, and a girl thirteen years of age, who had both recently come from that capital. While the disease prevailed in Astracan, some fishermen were there from Makovsky and Schitinsky, two places on the shore of the Caspian, where the Volga opens into it. These men, terrified at the progress of the epidemic, hastened home to place themselves as they imagined, in security. But they had already imbibed the poison; some fell sick on the way, others after arriving at their homes; and the disease soon spread throughout the community to which they belonged." Thousands of those, who were employed in navigating the Volga, made their escape from Astracan as soon as the disease broke forth; in little more than a month it had ascended as high as Nijni-Novogorod, and in all the intermediate districts which it visited, its first victims were either the navigators of the Volga, or individuals come from places where it had already raged.

When the disease visited Manilla, in 1820, the captains of the vessels which lay in the harbour forbade them all intercourse with the town; and in this way, it would appear, did they all escape. When the Mauritius became affected in 1816, M. Chamaret de Chozal shut up all his family, cut off all communication with the diseased, and thus remained exempt from its influence. M. Guys, the French consul, closed up his household in a similar way, within his garden at Tripoli; all the Europeans who were in the town followed his example, and none of them were attacked. M. Keraudren observes, "that in 1822, M. de Lesseps, the French consul at Aleppo, took refuge with all who chose to accompany him, in a garden at a small distance from the town, which was surrounded by a wall and a wide trench, and had only two doors by which it could be entered. His little colony amounted to, at least, two hundred individuals; every thing which was admitted to them from without, underwent a strict quarantine, and not a single case of disease occurred; while in eighteen days 4,000 perished in the town." Dr. Loder states, "that the authorities at Sarepta interdicted all intercourse with Astracan and Nijni-Novogorod, while they were infected, and Sarepta was preserved." It is narrated by Dr. Solomov, "that many gardens in the neighbourhood of Astracan remained unaffected, by discontinuing communication with the diseased; and that many villages in the lordships of Smirnov, Beketov, and Prince Colgoruki, escaped by the same precaution. A little set of villages at Darmala-Gubeewa threw a similar *cordon sanitaire* around their habitations, and escaped, while the disease was prowling throughout the neighbourhood. The school of military cadets at Moscow was saved by cutting them off from all correspondence with the citizens; several German colonies in the government of Stratof, and a Moravian colony on the banks of the Volga, were similarly preserved.

Such are the principal facts upon which the contagionists ground



the doctrine which they advocate ; and the authorities which they advance to add influence to their evidence, are entitled to much attention.

Drs. Scott and Stuart, the principal members of the Medical Board at Bombay, say, that the Cholera appears to them capable of being "transported from place to place, as in cases of ordinary contagion or infection ; and also to possess the power of propagating itself by the same means that other contagions do." The physicians of the two divisions of the army at Bengal deem it to be contagious : and from Jamieson's report it will be seen that the Medical Board of Calcutta declares, that by the accumulation of men into one place it may become contagious. Dr. Kennedy observes, "that, to the best of my judgment, I know no character belonging to any contagious disease, which Cholera does not appear to me to possess ; and that, if it be not contagious, I know no other disease which I would be inclined to consider so." The Bombay Report states, "that we are enabled to trace the disease as it is creeping along from village to village on that island, (Salsette,) precisely in the same way ; that is, by the arrival of people affected with the disease from places where it was known to prevail ; and we are assured that there are some small villages on that island, which from want of this sort of communication, or from some other cause, have, after a lapse of four months, hitherto escaped entirely." The Medical Board of Russia say, that it is "a contagion *sui generis*, less severe perhaps than the plague, and requiring a predisposition to make it effective. The Central Sanitary Commission in France advocate the same view ; and the Superior Council, which has been since erected, have confirmed their judgment. The Persian and Turkish governments have acted under the same conviction ; all the continental powers have unanimously advocated the necessity of quarantine. The four Austrian physicians, who were sent out to Russia, have reported to their government that it spreads by contagion ; Drs. Walker, Barry, and Russel, give the same information ; the French Commissioners are unanimous in the same view ; Drs. Makartienne, Martinengo, Meunier, Angelin, and Salinas, who have witnessed Cholera in different countries, are contagionists ; Sir William Crichton and Dr. Loder, physicians to Nicholas, are strong advocates to this doctrine ; the Russian General Diebitsch, was so convinced of its contagious nature, that when Shezel, his physician, informed him of the nature of his disease, he ordered all in his presence, with the exception of the medical men, to leave the room ; the Polish general, Skrynecki, is of the same opinion. Immediately after the battle of Iguinie, Cholera was seen for the first time in the Polish army. The medical officers were immediately set to work, and by great exertions succeeded in extinguishing it ; but the battle of Ostrolenka brought them again in contact with the Russians, the disease again appeared, and from that fatal victory the English ambassador, Lord Heytesbury, at the Russian court, hesitates not to pronounce this disease contagious ; finally, all the French consuls, Lessops, Guys, Reynaud, and Gamba, are grounded in the same faith.

We have thus given the opinion, facts, and arguments both in fa-



your and against contagion ; and the reader is left to form his own opinion on the subject.

It appears to me that the Cholera ordinarily is not infectious ; that is it is not conveyed by contact like the plague ; but from many facts and circumstances, it would seem that it may be communicated much in the same manner as is yellow, or typhus fever ; that is, by constantly inhaling the effluvia, from those labouring under the disease, and particularly in close, filthy and unventilated apartments, and under, perhaps, some predisposing cause or causes, such as fatigue, errors in diet, &c. It is a fact, that while most persons have attended those labouring under the disease, and escaped, others have taken it, after exposure in a striking manner, even in places where the disease had not previously prevailed.

#### DISSECTION.

*Dissections of those who die of the Cholera, show that the mucous membrane of the intestines is the seat of the disease.* It exhibits every mark of excessive irritation, with more or less inflammation, according to the violence and duration of the disease. The liver and gall bladder is found in a very morbid condition, but no other organs exhibit any symptoms of injury, except those arising from sympathy. One writer states, that when the disease has been protracted, slight patches of red are here and there observed, and which assume a very dark appearance ; and the lining membrane is rendered so soft as to be readily scraped away by the nail. He says, that the redness of the intestine corresponded with the external discoloration, and both were in proportion to the drain of fluids from the body : and to the rapidity and violence of the disease, from this discolorature extended in many cases to the uterus, bladder, and even to the bones, all which symptoms exhibit unequivocally, that the proximate cause of the disease, is the action, or irritation of a most deadly poison, or acid on the mucous membrane of the alimentary canal.

#### COMMON PRACTICE.

It is impossible for me to give the practice which has been pursued in Cholera by physicians generally. There are as many different medicines, as there are physicians. Some gave large quantities of ice, some on the contrary, made use of boiling hot water ; some rubbed a pound of mercurial ointment into the system ; some opened the veins, and injected salt and water into them ; and the treatment, in short, principally consisted in a series of experiments, till in some parts the hospitals were beset with a mob, in consequence of their inhuman treatment. But, generally speaking, bleeding, mercury, &c. were the principal articles relied upon in the treatment of the complaint ; and although these were pretty sure soon to prove fatal, yet most physicians persisted in using them.

## REFORMED PRACTICE.

1st. *In the premonitory or incipient stage.* The following correspondence will show the treatment in this stage of the complaint, and partly in the confirmed stage.

## CIRCULAR.

To DR. W. BEACH, 10th WARD MEDICAL STATION.

*New-York, 10th August, 1832.*

Sir—I beg to ask you what treatment you have found most successful in the premonitory stage of Cholera, say diarrhœa, or uneasiness or pain in the bowels; and whether such treatment has been uniformly successful, and if not, by what circumstances it has been rendered ineffectual? Be pleased also to state what number you have prescribed for, and whether you have seen any case of Cholera not preceded by diarrhœa.

In behalf of the Special Medical Council,  
ALEX. H. STEVENS, M. D. *President.*

## ANSWER.

*New-York, August 15th, 1832.*  
*Tenth Ward Medical Station.*

To ALEXANDER H. STEVENS, M. D. President of the S. M. C.

Sir—I have received a note from the S. M. C. requesting me to answer some interrogations respecting the Cholera.

First, "What treatment have you found most successful in the premonitory stage of Cholera, say diarrhœa, pain or uneasiness in the bowels, and whether such treatment has been uniformly successful?"

In answer to this question I have to state, that the treatment pursued at this station has been attended, invariably, with success.

The following recipe constitutes almost our only remedy for *nausea, vomiting, pain in the bowels, with flatulence, and diarrhœa.*

Take of Rhubarb, (*Rhei.*)

Sal Æratus, (*Bi Carbonas Potassæ, pul.*)

Peppermint plant, (*Mentha Pepperita, pul.*)

2 Scruples of each.—*Mix.*

Add half a pint of boiling water, sweeten with loaf sugar, then add a table spoonful of best brandy; of this, give to an adult, a table spoonful every hour until it acts as a laxative, or moderately upon the bowels. In the intervals, diluent drinks, such as infusions of *catnip* and *spearmint* are directed to be taken.

This preparation is sufficient to remove the diarrhœa. Where there is considerable pain, we have found the addition of aromatics attended

\* See Neutralizing Mixture, under the head of Pharmacy.

with additional benefit; to the same composition is added, of cinnamon and cloves, *pul., a a.* (*Equal parts; one scruple.*)

We have found the administration of *diaphoretic* medicine very much to aid in the removal of the disease; bathing the feet, with the use of the drinks above mentioned, are in general sufficient to cause perspiration.

In neglected and protracted cases of diarrhœa, when the patient has complained of great pain, restlessness, *want of sleep, &c.*, 10 gr. of diaphoretic powders has been directed to be given at bed time.

The following tincture to be applied over the region of the abdomen.

Take of Capsicum, two table spoonfuls.

Brandy, 1 pint: simmer a few moments and apply warm, with flannel, and repeat often.

Second interrogation.—“What number have you prescribed for?”

In reply to which I have to state that the aggregate number has been, up to the present time, since the epidemic, (a period of 40 odd days,) *seven hundred and eighty.\**

Third interrogation.—“Have you seen any case of Cholera not preceded by diarrhœa?”

In reply to which I have to inform, that in a majority of the cases of Cholera, and very generally, an attack of the disease has been preceded by diarrhœa, but not invariably so. We have fully and clearly ascertained that some cases have no such premonitory symptoms; but these have been of a very *malignant* and *fatal* character, and confined principally to the *aged* and *intemperate*.

In concluding this communication, a sense of duty constrains me to state, that much of the success attending our practice must be imputed to the promptness, persevering industry, and indefatigable exertions of our worthy Alderman, Mr. John Palmer, and Mr. John Minuse, the deputy Warden, in visiting from house to house, to obtain the earliest information of every individual labouring under the premonitory symptoms of Cholera, and immediately reporting the same to this station, which has often enabled us to arrest the disease in its incipient or forming stage; a measure which cannot be too strongly recommended to our municipal authorities. A sense of duty also constrains me to render a tribute of respect to the medical gentlemen, or assistants, associated with me, for their untiring zeal and laborious exertions, by day and by night, in discharging their duties to the sick.† In conclusion, it may not be irrelevant or unsatisfactory to add, that the health of the physicians who have attended at our station has not been impaired, notwithstanding their assiduous attention (and oftentimes in the capacity of nurses) to the most distressed and malignant

\* This answer was given before the epidemic had subsided.

† A tribute of respect is due to those physicians who were associated with me during the epidemic, for the hazard they incurred; their zeal, industry, and untiring exertions, by day and by night, in visiting, attending, and often nursing patients labouring under the disease. While many elderly physicians of the old school fled in dismay from the pestilence, abandoning their former patrons or patients, these physicians, most of whom were young, remained at their posts, and most faithfully and honourably dis-

cases, laying in filthy, unventilated, and loathsome apartments and situations. All which is respectfully submitted.

W. BEACH, M. D.

Physician of the 10th Ward Medical Station.

2d. *In the confirmed stage of the complaint.* The indication of cure in the confirmed stage of Cholera will be first to neutralize the poison, and second, to expel it from the system by the various secretions, and principally the skin.

The pathology or nature of the complaint from the commencement, shows the existence of some specific poison, and hence it is obvious that our first object should be to neutralize, and then expel it from the system by the various outlets or secretions. To effect the first, we give an alkali, the bi-carbonate of potash, combined with a purgative, as directed under the head of premonitory symptoms, in order, first, to destroy the poison, and second, to remove as speedily as possible the offensive matter from the stomach and intestines, in the manner that nature generally indicates. Not only must the poison be thrown from the system by the intestines, but by the skin; and therefore the patient must be thrown into a free perspiration as soon as possible; to effect which, let the feet and legs be immediately immersed in *hot ley water*, and continued fifteen or twenty minutes. At the same time, the patient must take a *strong tea* made of the *peppermint plant*, and two large teaspoonfuls of the sudorific drops may be given in a tumbler of the same. To be repeated every hour till perspiration take place. One quart should be taken in as short time as possible. Let bricks be heated, inclosed in muslin dipped in vinegar, and applied to the feet and sides.

This will assist to remove the pain and spasms of the stomach, to check the vomiting, promote a discharge of urine, allay the irritation of the intestines, and what is of inconceivable importance, to dilute the morbid fluid, and expel it through the medium of the skin by exciting a copious perspiration, while it will return the accumulated and congested blood from the centre to the surface, or in other words, will *equalize* the circulation or produce *reaction*.

I know of no single article, (an alkali and rhubarb excepted,) so exceedingly valuable in the Cholera, as the simple peppermint plant. It appears to have a specific effect in the complaint, different from any other agent.

I have several times been attacked with nausea, retching, or vomiting, with horrid sensations at the stomach and other parts; when drink-

charged their duty. A discerning public, it is to be hoped, will render them that praise and credit to which they are entitled. And I have deemed it proper to record the names of those who attended at the Tenth Ward Medical Station during the epidemic.

Doctors J. B. DAY, from New-Jersey.

CHEEVERS, City of New-York.

D. CARPENTER, City of New-York.

MARTIN LEWIS, State of Maine.

OATMAN, Vermont.

WARREN ALFORD, North Carolina.

H. D. SHEPPARD, West New-Jersey.

BELCHER, City of New-York, of the old school.



ing freely of a tea of this herb, all these unpleasant symptoms have soon vanished.

“Drinks taken into the stomach, dilute and weaken the power of any irritating matters that may be in the alimentary canal, and entering the blood through the lacteal vessels, furnish the exhaling vessels of the skin, kidneys, lungs, and alimentary canal with a vehicle to assist them to throw out and carry off, the subtle poisonous effluvia that has been taken in by the absorbents, is mixt with the whole mass of blood, and is acting on the whole nervous system, and, in a word, upon the whole body. Except the system is regularly and abundantly supplied with water, and simple drinks, the *cause* of disease, the noxious matters in the blood cannot be removed; no other remedies in nature can do it.”

The first preparation given, viz., the *neutralizing mixture*, in general will soon allay the vomiting and purging; and our next object will be as before intimated, to expel the poison by the different excretions, and which must be effected in the most prompt manner, as it may literally be said in this terrible disease, “that delays are dangerous.” If the symptoms do not readily yield to this treatment, let the patient be immersed in a vapour or hot bath, and afterward the body well rubbed.

The cramps which are a characteristic symptom of Cholera, must claim particular attention. If the foregoing means are put into execution, and perspiration is promoted, the cramps will subside; but in very malignant cases, this desirable object cannot always be accomplished, when it will become necessary to resort to other means.

We may first rub the patient with a strong tincture of capsicum and red pepper, as has been before mentioned, applied very warm, and if these do not control the cramps, apply dry friction, the rubbing to be continued without intermission.

To alleviate the *cramps*, says Smith, I know nothing equal to frictions. After a very extensive use of vesicatories and sinapisms, my opinion of them is not very favourable. They interrupt the employment of frictions, and are far less efficacious than the latter. In the severest cases they do not draw; when they do, they are painful without controlling the cramps. It is true that frictions require frequently to be repeated, but the relief afforded by them is so great, that the patient often requests them, when his prostration renders him regardless of almost every thing else. To them as a powerful means of establishing reaction I have adverted.

Let the following preparation be given, which I have named the *choleric and antispasmodic mixture*.

Take of Camphorated mixture, or spirits, four ounces.

Essence of peppermint, four ounces.

Tincture of capsicum, one drachm.

Syrup of ginger, half an ounce—mix.

Of this, let one table spoonful be taken every one fourth or half hour, or two hours, according to the urgency of the symptoms. To be accompanied with the use of copious draughts of thin indian meal gruel, in which has been dissolved a little *sal æratus*.

If this mixture does not soon lessen the cramps, and improve the con-

dition of the patient, an anodyne may be given ; a good form of which is the *black drop*, a proper dose in general, will be about twenty of them. It is best to disperse with opium, as much as possible, as it is apt to retain the poison in the system ; but under certain circumstances, it is beneficial. Used in the form of injections, we have often found it exceedingly valuable. It has allayed the vomiting and cramps, when other means seemed only to mitigate them. But the other ingredients of the injection or clyster, contribute much to this effect, no doubt. Let the following be used. Take a pint of the mucilage or tea of the *slippery elm bark*, add half a *pint of molasses*, and a *gill of sweet oil*, a *tea spoonful of sal æratus*, and *half an ounce of laudanum*. Let the whole be given at once if possible.

While these means are employed, *fomentations* may be applied to the stomach and bowels.

Let *hops* be simmered in vinegar, enclosed in flannel, and applied from the stomach to the lower part of the abdomen, and extending to each side, to be applied as hot or warm as the patient can bear, and to be often renewed.

Salt has been highly recommended. After making trial, says Dr. Tappen, of all the different emetics which have been recommended, I confine myself to the solution of muriate of soda ; (common salt ; ) one tablespoonful dissolved in a pint of lukewarm water, administered at one dose, very effectually relieves the stomach when oppressed with the kind of matter noticed.

In 1831, says Dr. Barry, two German physicians had charge of the Custom House Hospital at St. Petersburg, in which there were in all, during the epidemic, thirty cases of Cholera ; and of this number they lost three patients, and twenty-seven recovered. I mention this fact on the authority of Sir William Crichton : who states also, that, at the request of the Emperor, he had communicated this practice to the army physicians in Poland. They gave two tablespoonsful of common salt in six ounces of the water at once, and one spoonful of the same, cold, every hour subsequently ; by whom it had been found to be very advantageous.

The muriate of soda, (common salt,) was the remedy chiefly relied upon ; and by way of having a theory of their own, they used it as an emetic, and gave it in the beginning in such doses that it produced vomiting, after which they used it in smaller quantities ; and to this, in all probability, they were entirely indebted for their great success.

One of the physicians at our station states, that he administered the tincture of *lobelia*, in tablespoonful doses, every twenty minutes, till free vomiting took place, and cured one case in a state of collapse, when all hopes of recovery appeared gone. It was given merely as an experiment. I have since been informed that one or two have used this article with great success, but this is the only case, I believe, in which we prescribed it.

The difficult point in the treatment of Cholera is the producing of a complete and free reaction. When this is fully developed, though the state of the patient is attended with danger of life, and requires a

very careful and timeous administration of remedies, we may in general pronounce him recoverable.

#### TREATMENT OF THE COLD OR COLLAPSED STAGE.

If the precursors have been neglected, or if the disease opens by the cold stage, a new set of symptoms is ushered in, infinitely more formidable, and far more difficult to be successfully combated.

On approaching the bedside of a patient, cold as marble, and pulseless, with universal and extreme prostration, agonized with horrid cramps, the surface of his body shrunk, and deserted as it were by the fluids, to supply the great and incessant drain of vomiting and purging, several indications present themselves to be fulfilled. The most important, indeed the essential indication of this stage, is to restore warmth and action to the surface, in other words, to establish reaction. At the same time, we must obviate those symptoms which torture and exhaust the patient. To accomplish these ends, the patient should be put in a warm bed.

There must be administered the same medicines, and the same treatment pursued as has been recommended in the confirmed stage, with very little if any variation. Frictions repeated from time to time, contribute powerfully to restore warmth and action to the surface. If practicable, let the patient be immediately immersed in a bath, as hot as possible, in which a pound of pearl ash has been dissolved; then let the body be rubbed dry, and inclosed in flannel blankets and put into bed. Hot bricks as before mentioned may also be applied, and hot or warm injections or clysters be administered, and if possible, let large quantities of hot peppermint tea be given.

Sometimes if the external heat has been too great, it causes distress. When this occurs, the temperature must be somewhat diminished, and the most heating or stimulating drinks given internally, to raise the "inward, above the outward heat." As soon as the patient can swallow, let the antispasmodic mixture be given as before directed.

Dr. Seavy has the following remarks on this subject:

"When violent symptoms manifest themselves, the one which requires to be first attended to is, *the great coldness of the skin and extremities.*

"This drives the blood from the vessels of the skin, distending those which are internal, and surcharging the brain, and all the vital organs; causing oppression in the region of the stomach, and distress and pain in the bowels. It is of the greatest importance immediately to remove this symptom and equalize the circulation, i. e. to restore a free circulation of the blood to the surface and extremities. To fulfil this intention, the most certain and effectual method is to place the patient in bed, and make it hot with steam, so as to envelope the whole body of the patient; let two persons be appointed to attend upon him constantly, and rub the limbs and body continually with cloths, till the natural warmth and circulation is restored, and sweating begins. If the natural warmth of the skin and extremities, and free circulation of the



blood is not restored, and sweating produced, the disease will have a fatal termination.

"The power of heat and frictions combined is the greatest that can be employed to restore the lost balance of the circulation, and remove the congestive or oppressive state of the internal organs.

"The length of time that will be necessary to keep the body immersed in hot vapour, and to apply frictions, depends on circumstances. It should be continued till the body will keep warm, and the circulation continue free without these means.

"In cases of the spotted fever, otherwise called the cold plague, (a disease more fatal than the Cholera itself, in proportion to the number attacked with it,) which prevailed in some parts of this country in 1808, 1810, and 1812, it was found essential, in order to save the patient, to keep the bed hot with steam during 48 or 60 hours. If the heat and frictions were discontinued short of that time, the patient would become cold, like a piece of iron taken out of the fire, and soon die."

In a word, the leading indication in the cure of Cholera, either in the confirmed or collapsed stage, is to *establish reaction*, or in other words to *promote perspiration*, which returns the poison with the blood from the centre to the surface. When this takes place, which eliminates the poison by the natural excretions of the system, the *vomiting*, *purging*, and *cramps* are gradually diminished, or entirely subside; and these ends are effected, not by any single medicine, or exclusive method of treatment, but by the combination of all the agents and means detailed.

#### STAGE OF REACTION.

Sometimes when reaction takes place, it is very feeble and imperfect, at other times, it is excessive or too great. In the former instance, nature must be assisted or aided, while in the latter, her action must be restrained, which objects must be accomplished by treating the symptoms on general principles.

Sometimes typhoid symptoms supervene, which also requires appropriate treatment. In a word, particular symptoms must be treated by particular remedies.

Dr. Barry, in a letter from St. Petersburg, July 20th, 1831, thus describes the symptoms.

"When the first stage safely passes, very rarely indeed, not five times in a hundred does the patient return to health without passing through a dangerous fever, which not unfrequently assumes a typhoid character, with reddish, brown, dry tongue; stupour; suffused eyes; constipated and tender belly; dark sordes about the lips and teeth. The pulse, however, is generally quicker, and the skin hotter than in primitive typhus. In this state many die from the fourth to the seventh day, and even later. In other cases the fever is mild, and goes off within the fourth day by copious perspiration." The same symptoms occurred in cases in this city.



## CONVALESCENCE.

Sometimes when the patient becomes convalescent, his complete recovery is very much protracted, and great care is necessary in order to prevent a relapse. Fatigue and exposure of every kind must be avoided.

When the treatment which I have detailed has been vigorously put into execution, before the disease has too far advanced, the patient will recover, and as soon as the circulation is restored, or reaction established, we may predict a favourable termination, or pronounce the patient out of danger. We have tried every kind of practice and medicine ordinarily prescribed or used by physicians, as well as a vast number of boasted remedies, and we have found this the only judicious, safe, and effectual course of treatment, and while they were dying in every direction around us, under an opposite practice, we have had the pleasure of seeing nearly every person recover, except the most malignant cases, and such it seems as impossible to cure, as though a cannon ball was shot through the body.

I regret that I cannot give an accurate statement of the precise number that we cured at our station; owing to a throng of patients, and other causes, a proper register was not kept. But one of the graduates of our school who practised in another part of the city, has been more accurate in his account, and he has furnished me with a statement which I here subjoin. His treatment was precisely the same as ours; and the proportion cured as far as I can ascertain, the same.

I addressed the following note to him:

Doctor HOPKINS,

SIR—As you have had considerable experience in the prevailing epidemic, please inform me what your success has been; first, in premonitory symptoms; second, in Spasmodic Cholera; third, the number of cases you have treated in each stage.

Compliance with this request, will oblige yours,

W. BEACH.

*New-York, Sept. 19th, 1832.*

*New-York, Sept. 20th, 1832.*

W. BEACH, M. D.

Dear Sir—In compliance with your request, I subjoin a concise statement of the success which has attended my practice, up to the present period, during the prevailing epidemic.

In Spasmodic Cholera I have had thirty-seven cases, of which ten were malignant, and eight in a state of collapse. In the premonitory or first stage, I have had about one hundred and twenty, in every case of which my treatment has proved a sovereign remedy. In the thirty-seven cases which I treated in the confirmed stage, all recovered except six, and to some of these I was called when it was too late to prescribe with any prospect of success.

Yours very respectfully,

GEORGE W. HOPKINS, M. D.

By comparing our practice with other physicians, I find it infinitely superior,

G. W. H.

## PREVENTION.

1st. *Quarantine regulations.* Attempts have been made to prevent the spread of Cholera by means of quarantine regulations, but they have **proved** entirely useless. We have no evidence that they have ever prevented the disorder from spreading, and this must appear obvious when we reflect that it is communicated by atmospheric influence, and not by contact or contagion, except perhaps in some few instances under peculiarly unfavourable circumstances. Like yellow fever it requires a peculiar state of the air to propagate it.

2d. *Filth.* It has been shown that filth contributes much to the production of this disease.

The streets should be daily cleansed of all offal, dirt, and any impurities whatever, and the gutters frequently washed with running water. In no yard or open lot should any collections of dirt, or animal, or vegetable matters, be allowed to remain, nor any ditch or pool be left unfilled with earth. No removable obstruction to a freer ventilation of courts, and alleys, and narrow streets, should be tolerated, and all persons should be immediately removed from such places as soon as the Cholera appears. To this precaution Philadelphia probably owes the preservation of many of its inhabitants.

3d. *Those which regard the habitation.* The cellars should be kept dry, and the sinks cleaned out, or occasionally water with a little chloride of lime, introduced into them. This substance should be sprinkled over the floors of those cellars more particularly, through which there is not a free current of air. Dissolved in water, with the addition of a little quicklime, it should be applied as a wash to the walls of cellars, closets, and rooms in which many persons work together. Free ventilation of the sitting and bed rooms should be enjoined and practised—the floors dry-scrubbed, and, as well as the bedding and bed clothes, aired at least once a day. Arrangements should be made for suitable ventilation and constant renewal of the air in all kinds of rooms or halls in which a number of persons congregate together, as in schools, churches, manufactories, &c. The air should be introduced in such a way as not to blow in a current upon the persons in the room, or to suddenly chill them after being heated, and nothing perhaps contributes more to purify the air than fire; hence they should be kept up occasionally.

*Persons.* In order to prevent the disease, personal cleanliness should be observed; likewise fatigue should be avoided. All crude vegetables and fruit, particularly such kinds as easily ferment: sudden transitions from heat to cold should be guarded against. Warm clothing should be used, and above all universal temperance in eating and drinking. Ardent spirits of any kind should not be drank; the feet must be kept warm, and insensible perspiration be kept up. This contributes more than any other means to throw off the poison which is constantly accumulating in the system, and if checked, is very liable to bring on the complaint. A physician in the West Indies has the following judicious remarks upon this subject:

"A free perspiration is the surest preservative of health in a hot climate. In carrying on duty at St. Domingo, I was exposed to a good deal of riding, being generally six or eight hours on horse-back every day; and consequently I perspired very freely. I never wore flannel, but made use of cotton shirts. It was not unusual for me to shift five times a day; sometimes oftener, each shirt being drenched in perspiration. To this profusion of it I attribute my safety, amidst so much exhalation of miasmata, for so long a time. I drank freely of lemonade, sangoree, tamarind water, weak wine and water, and other diluent compositions; and when night came I was always prepared to enjoy my repose."

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In concluding this part of the subject, I shall insert the following report.

"The medical commission appointed by the sanitary committee to visit Canada, for the purpose of making investigations concerning the epidemic disease prevailing there, which will be laid before the committee in a few days, present the following general conclusions they have formed as the result of their observations, which they flatter themselves will tend to allay the public anxiety.

"1st. The disease so lately an epidemic in Montreal and Quebec, and which now prevails in the city of New-York, and is extending throughout the country, is Malignant Cholera, the same that has ravaged and spread its devastations over Europe, under the name of Asiatic and Spasmodic Cholera.

"2d. That they have not been able to ascertain any positive unequivocal fact to justify a belief that it is a disease communicated by those affected with it, or is one of importation.

"3d. That during the prevalence of the epidemic constitution or influence, a general predisposition exists in the whole community, from which very few individuals are exempt, productive of a liability to the disease.

"4th. That this predisposition is manifested by embarrassed and difficult digestion, sense of heat, fulness, uneasiness or pain in the abdomen, irregularity of bowels, a furred and pasty tongue, with frequency of cramps or constrictions in the muscles of the extremities, especially at night.

"5th. That this state of predisposition will not give rise to an attack of the disease, without the application of an exciting cause.

"6th. That the exciting causes of the disease are moral excitants, especially fear and anger; intemperance in the use of fermented and spirituous liquors, or in eating, overloading the stomach; acid drinks, or large draughts of cold water; the use of crude indigestible food, whether animal or vegetable, particularly the latter; excessive exertion or fatigue in the heat of the day; exposure to the night air, sitting in currents of air, and particularly sleeping with too light covering, and with the windows raised, except the rooms are very small and confined. Most of the attacks occur in the night, from 11 or 12 o'clock to 3 or 4 in the morning.



" 7th. That prudence in living during the epidemic period, which continues from six weeks to three months, the wearing of flannel, particularly on the body, keeping the feet warm and dry, the avoidance of improper food and drinks, tranquillity of mind and body, are almost certain guarantees against the assaults of the disease, and disarm the pestilence of its malignity.

" 8th. That the disease, when abandoned to its course, passes through different stages, in all of which it is easily controlled, except one—the cold stage, or period of collapse, and which is in almost every instance, preceded by the symptoms of the forming stage, when the disease, if timely treated, is arrested with facility.

" 9th. That the symptoms of this forming stage should be generally promulgated, and persons instructed of the necessity of an immediate attention to them. It is ignorance in this respect, amongst the labouring and lower classes of society, and their habits of life, leading to indifference and inattention, that plunges so many, belonging to those conditions, in the desperate situation so frequently met with, when medical aid and human skill are utterly unavailing. Those symptoms are, a sudden looseness of the bowels, the discharges becoming thin, watery, and colourless, or whitish, with little odour—vertigo or dizziness—nausea, oppression, pain and cramps of the stomach, with retching and vomiting of a fluid, generally resembling dirty river water, attended or soon followed by cramps of the extremities, particularly of the legs and thighs.

" 10th. When the foregoing symptoms appear, application for remedial assistance must be made immediately. The delay of an hour may usher in the cold stage, or period of exanimated prostration and collapse, from which it is almost impossible to resuscitate the expiring energies of the economy.

" 11th. That every preparation should be made by the public authorities, in anticipation of the appearance of the disease, providing the means of treatment for those who cannot command them, so that aid may be promptly administered to all, the moment of attack. These means are a number of small hospitals, or houses of receptions, in various parts of the city; stations where nurses, physicians, and students, with suitable medicines and apparatus, can be procured in the night without delay, the evacuation of certain localities, where the occurrence of numerous cases indicates a pestiferous influence, and the furnishing to the poor, as far as practicable, wholesome and nourishing food.

By the adoption and observance of the foregoing means of precaution and prevention, in addition to the sanative measures already adopted, the commission are convinced that the prevalence of the disease will be greatly circumscribed, its mortality diminished, and the public guarded against panic and alarm, the great sources of danger—and under the blessing of Divine Providence, the pestilence will be shorn of its terrors, and mitigated in its destructive fury.

SAMUEL JACKSON,  
CHAS. D. MEIGS,  
RICHARD HARLAN.



In concluding this Treatise on Cholera, I will subjoin a few other modes of treatment, which are stated to have been attended with great success, the principles of which are generally similar to those laid down in this work.

FROM A FOREIGN PAPER.—CURE FOR THE CHOLERA.

The Paris accounts of the Cholera epidemic are really alarming, and should admonish us in this country to adopt every possible guard and protection against its introduction, particularly in ventilating the clothing of seamen, and prohibiting the importation of old rags. We have been constantly attentive to such remedies as have been practically successful, and we publish the following, pursued with entire success at *Weizniz*. Out of 240 persons treated, every one was saved; and we advise our readers to cut out and preserve the mode of treatment.

“Take a pint of strong spirits of wine, and half a pint of good white wine vinegar, add to them one ounce of powdered camphor, one ounce of flour of mustard, or bruised mustard seed, a quarter of an ounce of ground pepper, and a full tea-spoonful of bruised garlick; and lastly, half an ounce of powdered cantharides. Mix them well together in a bottle, and expose the mixture for twelve hours in the sun, or otherwise place it in some warm spot; take care to shake it repeatedly.

“As soon as the person is attacked, let him be instantly put to bed, under warm coverlids, and let his hands and feet be rubbed powerfully and uninterruptedly with the lotion, after it has been warmed. During this operation, let the patient take a glass of strong drink, composed of two parts of camomile flowers, and one part of balm mint.

“Persevere in this course, and at the end of fifteen minutes at the utmost, (the patient's head and body being kept well covered beneath the bed-clothes,) he will break out into a profuse perspiration.

“The patient must be kept in this state between two and three hours, but care must be taken that he does not fall asleep. After this, remove the extra covering from off the bed, and he will drop into a slumber, which will last between six and eight hours, and be accompanied by a gentle perspiration.

“When he awakes, he will find himself weak, but the disease will have entirely left him, and he will require nothing further but rest and moderate diet to restore him to perfect health.

“Especial attention must be paid, that the patient, after the operation of rubbing, does not so much as lift a finger above the clothes, for the slightest chill, whilst the perspiration is upon him, would be his death.

“When the cramps in the stomach come on, we apply very hot dry bandages of bran and ashes to the pit of the stomach, and, when necessary, a bladder of hot water to the region of the navel.

“The great point is to produce strong perspiration, and to restore the circulation of the blood, which, at the beginning of the attack, is drawn from the surface of the body, and thrown with frightful virulence on its inward parts.

“From my own experience, and the repeated proofs I have had of

its entire efficacy, I cannot but most conscientiously recommend this mode of treatment to universal adoption.

(Signed) " RIVER,  
" Commissioner of the District of Bothnia."

REMEDY FOR THE CHOLERA, AS PRACTISED AMONG THE INDIANS.

*Extracts from a letter from the Rev. R. Lugger, Upper-Canada, to his friend at New-Lebanon, N. Y.*

" Mohawk Mission, Grand River,  
" Upper-Canada, Sept. 7th, 1832.

" My dear Friend—The object of this is purely that of charity, or out of love, and by way of information to those who may be sufferers from *Cholera*, in your vicinity.

" Knowing your confidence in the *indigenous medicinal plants of our country*, I would inform you, for your encouragement, that this most awful malady, the Cholera, has been divested of all its frightfulness, since our Indians have had recourse to the vapour bath and their herbs. To stop the vomiting and purging, they use the choke cherry root and blackberry root, and the bath for a *sweat*. When the cramps come on, they use the wild chamomile [*mayweed*] and smartweed; [*polygonum* ;] and, when in bed, if the cramps are in the stomach, they place the *hot herbs* upon the stomach. As a drink, on going, or being put to bed, they use a strong tea, made of three parts of fern [*asplenium angustiflorum*] and one part boneset; drink freely.

" We had many deaths under the regular medical treatment, (opium, camphor, and calomel,) but since the herbs have been used, and without any other medical aid, every person has recovered. I send this for the benefit of mankind. Yours, sincerely,

" R. LUGGER,  
" Missionary to the Indians,  
" Grand River, Upper-Canada."

*Note.*—The above gentleman is a Missionary, sent out about six years ago by a London Foreign Missionary Society. When he came out to this country, he bought of J. P. Carroll, 25 John-street, New-York, one of Whitlaw's *Medicated Vapour Baths*, with the requisite directions, and has, during his residence among the Indians, done much good in relieving their diseases, and has really performed many remarkable cures.

N. L.

Stephen Ayres, of Canada, became very famous for curing the Cholera, by the following prescription, and bathing the surface with **ley water**. What its virtues may be, I know not, never having used it.

Take of Charcoal, two spoonsful,  
Lard, two do.  
Maple sugar, two do.  
This dose to be often repeated.

Dr. Thomas Choke, a physician in *India*, states that the following preparation is almost a specific in Cholera; that he lost but very few cases, out of several hundred, after using it.

Take of Nitrous Acid, (not Nitric,) 1 dr.

Peppermint Water, or Camphor mixture, 1 oz.

Tincture of Opium, 40 drops.

Give one-fourth part every three or four hours, in a cup full of thin gruel.

The body should be covered with a succession of dry hot cloths, bottles of hot water, or bricks, applied to the feet constantly, and sippings of fine strained gruel.

No spirits, wine, or other fermented liquors.

#### CONCLUDING REMARKS.

I regret that the want of room compels me to cut short any further remarks on this interesting disease. It would afford me much satisfaction did circumstances enable me to write much more upon the subject. But I believe that I have stated all, in a brief and comprehensive manner, which is necessary for practical purposes; and I can most confidently recommend the practice laid down, from its having been tested by much experience.

The question has been often asked, "Will Cholera again appear among us?" But it is impossible to say, with any degree of certainty, whether this will be the case or not. But if we may judge from its history, we may infer that it will again visit us, and continue a frightful scourge. Hence it becomes important that we obtain the proper means, both to prevent, and cure it. The fact mentioned by Webster, that all epidemics occur in cities, or among a dense population, has been proved, by the appearance of Cholera in all the principal cities and towns in the world, showing most conclusively, that its existence depends upon a departure from that state of simplicity in life, designed by our Creator.

The act of assembling together in congregated masses, with the intemperance, filth, and vice, consequent on such deviation, is the true cause and origin of this terrible malady. Among all the epidemics which have ever prevailed, very few have ever extended to farm houses. Hence the only sure preventative for every epidemic is plainly pointed out, which is, to return to that primeval state of living, both morally and physically, which was designed by our Creator; and nothing will ever effect this, but a strict adherence to morality and religion.

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Since writing the above, a woman, who nursed much among the Cholera, informs me, that one physician, Dr. Robson, of this city, pursued a similar practice in the disease that I have laid down. He was called to a child, two years old, labouring under the complaint, which was so severe as to cause him to screech, with the agony arising from the cramps. He placed him in a chair, with a blanket thrown around him, and underneath he put a vessel, containing spirits, which

he kept burning until free perspiration was produced ; he then removed him to the bed, the same blankets or covering around him, and gave drinks of medicine to keep up the perspiration : this treatment soon removed the symptoms, and the next day he was well.

The same woman who communicates this information, states, that if the Cholera was contagious, she certainly would have taken it, as she nursed much among those who were labouring under it. She washed the clothes and bedding of those who died of the disease, and constantly inhaled the most offensive effluvia which arose from them.

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“As destructive, says a writer as this disease is, it would appear that epidemics have occurred in different ages of the world, which have been more mortal.

“The reign of the Emperor Justinian was rendered remarkable among other circumstances, by a pestilence, or rather succession of pestilences “which almost destroyed the human race, and for which,” says Procopius, a contemporary historian, “no cause could be assigned but the will of God. It did not rage in one part of the world only, nor in one season of the year. It ravaged the whole world, seizing all descriptions of people, without regard to different constitutions, habits, or ages ; and without regard to their places of residence, their modes of subsistence, or their different pursuits. Some were seized in winter, some in summer ; others in other seasons of the year.”

“But the most awfully destructive pestilence which the world ever experienced was in the period which intervened between the years 1345 and 1350. We are told in the histories of the times, that it commenced in China. It appeared in Egypt, Syria, Greece, and Turkey, in 1346 ; in Italy and Sicily, in 1347 ; in France and the southern parts of Spain, and in England, in 1348 ; in Ireland, Holland, and Scotland, in 1349 ; and Germany, Hungary, and the north of Europe, in 1350. In this period a comet was visible—also meteors of various kinds ; the seasons were irregular—myriads of insects were seen—domestic animals sickened and died—and fish were found dead in immense numbers. So deadly was the onset of this plague, that at least half, some say two-thirds, of the human race, were destroyed by it. It was most fatal in cities, but in no place died less than a third of the inhabitants. In many cities, nine out of ten of the people perished, and many places were wholly depopulated. In London, we are told that 50,000 dead bodies were buried in one grave yard. In Norwich, about the same number perished. In Venice there died 100,000. In Lubec, 90,000. In Florence the same number. In the East it has been said, with what degree of accuracy we cannot vouch, that twenty millions perished in one year. In Spain, the disease raged three years, and carried off two-thirds of the people.

“In England, and probably in other countries, cattle were neglected, and ran at large over the land. The grain perished in the fields for want of reapers ; and after the malady ceased, multitudes of houses and buildings of all kinds were seen, mouldering to ruin. Although in the preceding year there had been abundance of provisions, yet the neglect of agriculture during the general distress produced a famine.



Such was the loss of labourers, that the few survivors afterward demanded exorbitant wages, and the parliament of England was obliged to interfere, and limit their wages, and even compel them to labour. See 23d Edward III, A. D. 1350.

"The disease reached the high northern latitudes; it broke out in Iceland, and was so fatal that the island is supposed never to have recovered its population. It was called the *sorte diod*, or black death.

"The pestilence was remarkably fatal to the monks and regular clergy of all descriptions. At Avignon, where the disease first appeared in France, 66 of the Carmelites had died before the citizens were apprised of the fact; and when it was discovered, a report circulated that the brethren had killed one another.

"Our motives for introducing here the narrative of the awful plagues in the reign of Justinian, and in the first part of the fourteenth century, are to show our readers, that mankind have suffered more on former occasions from the visitations of disease, than of late years from the dreaded scourge of Cholera; and also that they may be made aware of the ameliorating influence of civilization—implying improved minds, and knowledge, and a greater amount of means for promoting personal comfort, and protection against morbid causes. Dreadful as the mortality from Cholera has been, we can promptly discover that it is mainly restricted to a particular class, whose situation and habits reduce them to a level with the large majority of the people of the middle or barbarous ages, and expose them to the same calamities in seasons of epidemical disease. When a pestilential malady, call it what you will, yellow fever, Cholera, &c., now appears in a city, but a small portion of the inhabitants are victims to the disease. In former ages, analogous diseases passing under the common appellation of plague, would nearly depopulate a city. We have already mentioned the loss of 90,000 citizens of Florence, nearly a third of the entire population, by the plague in 1347. In 1359, on a similar visitation, the mortality was estimated at 100,000; whereas the deaths from the Cholera in Moscow, with a population of 350,000, in 1830, were short of 5000. St. Petersburg also, with nearly an equal population, encountered the like loss. Vienna, containing 300,000 inhabitants, lost not 4,000. Even in Paris, where the mortality was excessive, amounting to upward of 15,000, yet when we consider the population of that city, upward of 800,000 inhabitants, we cannot but be sensible of the increased advantages which the people of the civilized world at this time enjoy, of warding off pestilence entirely, or of greatly mitigating the violence of its attacks.

"In the next or latter part of the fifteenth century, viz. in 1483, or 1485, a new species of plague appeared in England, called the *Sudor Anglicus*, or sweating sickness of the English, because it was supposed either to have originated in England, or to have attacked none but Englishmen. This disease prevailed, however, at different times, in Ireland, Germany, Sweden and Holland. It was remarked, also, as illustrative of a general deterioration of the atmosphere, at this time, that when the sweating sickness prevailed in Europe, this, or some other pestilential disease was raging in other countries."

(Bell & Condee.)

# CONCEPTION, PREGNANCY, AND DISEASES

## OF

# WOMEN AND CHILDREN.

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### SECTION I.

#### CONCEPTION.

IN order to procreate the human species, there is a periodical discharge of blood from the vagina of every female, termed the catamenia or menses. The secretion of this fluid commences at that period of life termed puberty, which occurs at different ages, according to the climate. In some latitudes, it commences as early as eight or ten, and in others not until fifteen. As soon as conception or pregnancy commences, this discharge ceases and goes to support the fœtus or the child.

The manner in which conception takes place, has ever been a fruitful subject of inquiry, but we are unable to account for this change precisely. It is however pretty evident that the semen of the male is introduced into the uterus, while the semen of the female is discharged from the ovaria by means of the falopian tubes; the fimbriated extremity of which closely embraces that organ.

These tubes by a kind of peristaltic motion similar to the intestines convey the semen of the female into the uterus, where it unites with the semen of the male, and it is these united fluids which constitutes the rudiment of the fœtus, and which often gives to the child the appearance and dispositions of their parents. Sometimes one trait is inherited, sometimes another; sometimes a new compound or character is formed, (like a chemical union) which does not partake of the nature of either of the former.

#### PREGNANCY.

As soon as the female becomes pregnant, many new symptoms follow, such as sickness at the stomach, heartburn, peculiar longings, indigestion, headache, giddiness, &c.

The breasts become enlarged, shooting pains extend through them,

and the circle round the nipple alters to a dark brown colour. There often occurs likewise a feverish disposition, with debility, emaciation, irritability, and peevishness of temper, and a total alteration of the countenance, every feature of which becomes much sharpened. Some women breed so easily as to experience hardly any kind of inconvenience whatever : while others again are perfectly incapable of retaining the least thing on their stomach, and are thereby reduced to a state of extreme weakness.

With some women the vomiting will continue during the whole or greater part of the second stage of pregnancy, as well as the first ; but this does not usually happen. Partial suppressions of urine with a frequent inclination to void it ; itching about the external parts of generation, costiveness, tenesmus, and the piles, are what they are chiefly incommoded by during this period. Most women quicken about the sixteenth week after conception ; at which time the mother becomes sensible of the slightest efforts of the child, and besides the complaints just enumerated, she will then be liable to sudden faintings, and slight hysteric affections.

According to the common received opinion, quickening, so termed, has been generally understood to commence at the time when particular sensations are perceived by the mother, supposed to be occasioned by the first motion of the child. The most usual time of feeling any such symptoms is, about the latter end of the fourth or beginning of the fifth month of pregnancy : at this period the uterus filling up the pelvis, slips out and rises above the rim ; and from that sudden transition, women of a delicate constitution, and irritable fibre, are apt to faint, more particularly so if in an erect position.

During the last three months, or third stage of pregnancy, general uneasiness, restlessness, (particularly by night,) costiveness, œdematous swellings of the feet, ankles and private parts, cramps in the legs and thighs, difficulty of retaining the urine for any length of time, varicose swellings of the veins of the belly and lower extremities, and the piles, are the affections which usually prove most troublesome. In weak delicate women, of an irritable habit, convulsive fits sometimes arise, which are ever to be regarded in a dangerous light.

#### PARTICULAR SYMPTOMS.

*Sickness of the stomach.*—Some women are incessantly harassed by nausea, or sickness of the stomach, and that, during the whole period of gestation or pregnancy. For this symptom the patient should take the following preparation.

Take sal æratus, (*bi-carbonate of potash*,) 1 drachm, distilled peppermint water, eight ounces—mix.

Of this let a table spoonful be taken occasionally, to be accompanied with the use of spear mint tea. *Soda powders* have also been found very serviceable to allay the irritability of the stomach in such cases ; but the best preparation that I have ever found, to relieve the sickness of the stomach attendant on pregnancy, is an infusion or tea made of the *rose willow bark*, (*cornus sericea*.) This has proved in my hands

exceedingly valuable. The bowels must be regulated by gentle laxatives.

#### HEARTBURN.

For the heartburn which sometimes takes place in pregnancy, let the mixture be given mentioned under the head of sickness of the stomach; if this fail, let large teaspoonfuls of carbonate of magnesia be taken morning and evening in a little milk or syrup.

#### LETHARGY, HEADACHE, &c.

When there is a sense of fulness in the head, with giddiness and plethora, a dose of our common *physic* should be given, the feet must be immersed in warm ley water, and *mustard plasters* applied to them. A vegetable and spare diet should be strictly adhered to; this will prevent the necessity of bleeding.

#### COSTIVENESS.

If costiveness supervene, laxative medicine must be taken; but it is always better to regulate the bowels by stewed fruits, such as *apples, peaches, prunes, &c.*

#### PILES, SUPPRESSION OF URINE.

For the piles, apply the *stremonum ointment*, and obviate costiveness by the use of cream of tartar and flower of sulphur, &c. For the suppression of urine, let half a wine glass of best Holland gin be taken in a tumbler of *spear mint tea*; if this fail to afford relief, apply fomentations over the regions of the bladder, and drink freely of parsley tea.

#### TOOTHACHE.

To relieve the toothache, a few drops of the oil of cloves, red pepper, or any other essential oil, applied to the affected tooth, will often remove it for the time.

#### LONGINGS.

It is always desirable to gratify the peculiar longings of pregnant women, otherwise they are apt to miscarry from the anxiety these occasion, when not indulged in them. But that the child in the womb can be marked by any depraved appetite of the mother, or be mutilated by any disagreeable sight that may be presented to her, cannot readily be admitted.

#### HYSTERICIS.

Should sudden fainting, or any other hysterical affection, arise, little



more will be necessary than to expose the patient to a free open air, to place her in a horizontal position, and to give her a glass of cold water, with a few drops of hartshorn; or a little wine sufficiently diluted may also be taken in *compound spirits of lavender*.

#### SWELLING AND PAIN IN THE BREAST.

Sometimes the breasts become swollen, and very painful; to obviate this symptom, great care should be taken that no part of the dress be tight over the breasts, and they should be rubbed with a little *sassafras oil*, morning and night.

#### PALPITATION OF THE HEART.

When this affection occurs during pregnancy, it is usually from a disordered state of the stomach, and it must therefore be cleansed by moderate doses of physic; fifteen or twenty drops of the tincture of digitalis, to be taken three or four times per day, in a little tea.

#### SWELLINGS.

There is often puffy swellings in advanced stages of pregnancy particularly toward evening; for this symptom, bathe the feet often, and apply fomentations of *bitter herbs*.

#### CRAMPS.

For cramps of the legs and thighs, which often occur, let the parts be rubbed with tincture of capsicum. The feet must be often bathed in warm water, and the legs should be well covered with flannel.

#### WAKEFULNESS, &c.

For wakefulness, want of sleep, &c., give the *tincture or extract of hops*, at bed time, and let exercise be taken through the day.

#### FALSE PAINS.

False pains, resembling those attendant on actual labour, are apt to come on at a late period of pregnancy, often occasioning unnecessary alarm. Confinement in a horizontal position; laxative medicines if costive, and giving small and frequent doses of some opiate until the patient finds relief, may in such cases be necessary.

#### FITS, OR CONVULSIONS.

Sometimes in advanced stages of pregnancy, hysteric or other fits occur, as well as during labour.

One species is the consequence of great exhaustion from a tedious labour, excessive fatigue, or profuse hæmorrhage. This makes its attack without much warning, and generally alternates with delirium,

or great feeling of depression of strength and debility; the muscles about the face and chest are chiefly affected, and the pulse is small, frequent, and compressible; the face pale, the eyes sunk, the extremities cold. The fits succeed each other pretty quickly, and very soon terminate in a fatal syncope. Apparently it was this species of convulsion, says a writer, that destroyed her Royal Highness the Princess Charlotte of Wales.

In all cases of this nature, it should be our object to check the further operation of the exciting cause, by restraining hæmorrhage if present, or preventing every kind of exertion, and thus husband the strength which remains, or recruit it by cordials. Opiates will be of infinite service in conjunction with æther and camphor. Delivery is usually necessary.

Hysterical convulsions are more common during gestation than during labour. Here it may therefore only be necessary to add to what has already been said under the head of Hysteria, that if they do not speedily yield to antispasmodics, the warm bath had better be resorted to; and if that fails, we should, if possible deliver the woman.

The species of puerperal convulsions most generally met with, bears some likeness to epileptic fits; and it is only by being aware of the different degree of violence attending each, that at first sight we can distinguish them. A fit of puerperal convulsion is much more severe than one of epilepsy, and a paroxysm of the former is usually so violent, that a woman, who when in health was by no means strong, has been so convulsed as to shake the whole room, and to resist the coercive powers of many attendants. No force indeed can restrain a woman when in these convulsions. The distortion of her countenance is beyond conception; in regard to deformity of countenance, nothing bears any resemblance to the progress of this disease; the rapidity with which the eyes open and shut, and the sudden twirlings of the mouth, are inconceivable and frightful.

Puerperal convulsions seldom happen before the sixth month, but may occur at any time between this period and the completion of labour. They may arise at the first symptom of labour, or after the labour is finished. This species of convulsion depends on the state of the uterus, and has been observed to arise oftener during the first pregnancy than in any after one, particularly where the woman is unmarried.

For these convulsions, whatever may occasion them, an opium pill containing about three grains should be given.

The feet should be immediately immersed in water, as warm as can be born, and a large injection or clyster should be immediately administered.

And if these means do not soon afford relief, a mustard plaster should be applied between the shoulders and to the feet, and evaporating lotions, such as spirits, rain water, and vinegar applied to the head.

The warm bath is strongly recommended by Dr. Denman among the means for preventing convulsions in women previous to, or during their confinement. He states, that from its occasional use women will often find much benefit, and that it is one of the principal means which pro-

professional assistance is capable of affording for preventing puerperal convulsions, and for insuring an undisturbed labour. He also recommends a warm bath in labours rendered complex by convulsions, and this, upon a long and extensive experience. He says, that when convulsions have continued or increased, notwithstanding copious bleeding and the use of all other rational means, the patient may be put into the warm bath, in which she may remain a considerable time if the convulsions are suspended while she is in it. In instances where a warm bath could not be procured, or while it was preparing, he has directed flannels wrung out of hot water to be applied over the whole of the abdomen.

Dr. Denman mentions, "that he has seen the patient relieved from that state of irritation immediately preceding the convulsion by dipping feathers in cold water, and dashing it with force over the woman's face; as this roused her, and interrupted the progress of the fit. Where the further application of cold may be deemed necessary, and appear advisable, we may throw water over the patient's head, bringing this over the side of the bed, and holding an empty pail underneath to receive it. It should be done on the approach of the fit, which may be ascertained by attending to the vibrations of the intercostal muscles."

"In all cases of puerperal convulsion, after having paid due attention to the lessening of the cause which has given rise to it, we should uniformly exert our best endeavours to deliver the woman as expeditiously as possible, where it is practicable, without violence. When we find that the os uteri begins to relax and open, and which may take place although there be no labour pains, we must introduce the hand slowly, dilate it, and deliver the child."

"If convulsions take place after the delivery of the child for the first time, then the placenta, if it have not come away, ought immediately to be extracted; and afterward the bowels purged."

"Where convulsions continue after the uterus is emptied of its contents, all that we can do is to keep the brain unloaded, the bowels open, and the irritability of the system counteracted by opium, joined with other antispasmodics."

#### ABORTION.

Abortion, frequently takes place during pregnancy; when this occurs, let it be treated the same as laid down under that head.

#### LABOUR, DELIVERY, OR PARTURITION.

After seven months of pregnancy, the fœtus has all the conditions for breathing and exercising its digestion; it may then be separated from its mother, and change its mode of existence. Childbirth rarely, however, happens at this period: most frequently the fœtus remains two months longer in the uterus, and it does not pass out of this organ till after the revolution of nine months.

Examples are related of children being born after ten full months of gestation, but these cases are very doubtful, for it is very difficult

to know the exact period of conception. The legislation in France, however, has fixed the principle, that childbirth may take place the 299th day of pregnancy.

Nothing is more curious than the mechanism by which the fœtus is expelled; every thing happens with wonderful precision; all seems to have been foreseen, and calculated to favour its passage through the pelvis and the genital parts.

The physical causes that determine the exit of the fœtus are the contraction of the uterus, and that of the abdominal muscles; by their force the liquor amnii flows out, the head of the fœtus is engaged in the pelvis, it goes through it, and soon passes out by the valve, the folds of which disappear; these different phenomena take place in succession, and continue a certain time: they are accompanied with pains more or less severe, with swelling and softening of the soft parts of the pelvis and external genital parts, and with an abundant mucous secretion in the cavity of the vagina. All these circumstances, each in its own way, favour the passage of the fœtus.

To facilitate the study of this complicated action, it must be divided into several periods.

#### THE FIRST PERIOD OF CHILDBIRTH.

It is constituted by the precursory signs. Two or three days before childbirth, a flow of mucus takes place from the vagina, the external genital parts swell, and become softer; it is the same with the ligaments that unite the bones of the pelvis; the *cervix uteri* flattens, its opening is enlarged, its edges become thinner; slight pains, known under the name of *flying pains*, are felt in the loins and abdomen.

#### SECOND PERIOD.

Pains of a peculiar kind come on: they begin in the lumbar region, and seem to be propagated toward the *cervix uteri*, or the *rectum*; are renewed only after considerable intervals, as a quarter, or half an hour. Each of them is accompanied with an evident contraction of the body of the uterus, with tension of its neck, and dilatation of the opening; the finger directed into the vagina discovers that the envelopes of the fœtus are pushed outward, and that there is a considerable tumour, which is called *the waters*: the pains very soon become stronger, and the contractions of the uterus more powerful; the membranes break, and a part of the liquid escapes; the uterus contracts on itself, and is applied to the surface of the fœtus.

#### THIRD PERIOD.

The pains and contractions of the uterus increase considerably; they are instinctively accompanied by the contraction of the abdominal muscles. The woman who is aware of their effect is inclined to favour them, in making all the muscular efforts of which she is capable: her pulse then becomes stronger and more frequent; her face is animated, her eyes shine, her whole body is in extreme agitation, per-



spiration flows in abundance. The head is engaged in the pelvis; the occiput, placed at first above the left acetabulum, is directed inward and downward, and comes below and behind the arch of the pubis.

#### FOURTH PERIOD.

After some moments of repose, the pains and expulsive contractions resume all their activity; the head presents itself at the vulva, makes an effort to pass, and succeeds when there happens to be a contraction sufficiently strong to produce this effect. The head being once disengaged, the remaining parts of the body easily follow, on account of their smaller volume. The section of the umbilical cord is then made, and a ligature is put round it at a short distance from the umbilicus.

#### FIFTH PERIOD.

If the accoucheur has not proceeded immediately to the extraction of the placenta, after the birth of the child, slight pains are felt in a short time, the uterus contracts freely, but with force enough to throw off the placenta, and the membranes of the ovum: this expulsion bears the name of *delivery*. During the twelve or fifteen days that follow childbirth, the uterus contracts by degrees upon itself, the woman suffers abundant perspirations, her breasts are extended by the milk that they secrete; a flow of matter, which takes place from the vagina, called *lochia*, first sanguiferous, then whitish, indicates that the organs of the woman resume, by degrees, the disposition that they had before conception.

#### MANAGEMENT OF LABOUR.

There is no subject of which women in general are so entirely ignorant, as that of parturition, or delivery. Almost all of them are under the impression that labour is completed more by art than nature; hence the most noted accoucheurs are employed to attend during this interesting period: and professional men, in general, have no wish to undeceive them on this subject, as their interest is too much concerned. I have been often astonished to see the credulity and ignorance manifested on these occasions. Thanks and blessings have been poured upon me, under an idea that I had saved their lives in labour, when I had done nothing but look on and admire the perfectly adequate powers of nature, and superintend the efforts of her work; and it is nature which accomplishes all, while the accoucheur gets the credit of it! There is not one case in a thousand in which you can be but only a silent spectator, except it be to calm the fears of the ignorant and timid attendants. The mischief and injury that is done by the untimely interference of art is incalculable.

In pregnancy, women must be bled till they have not strength enough to accomplish delivery, and, when it takes place, the forceps or other instruments must be used, which often proves fatal to the mother, or child, or both.

Were all women properly instructed in this branch, many lives would be saved; and it is upon this branch that I wish to see a *Reform*, as

well as other branches of medicine; but the want of room prevents me from here enlarging upon this subject.

All women should be instructed in midwifery, and those who are of a proper turn of mind should be well qualified to act in the capacity of midwives: no man should ever be permitted to enter the apartment of a woman in labour, excepting in consultations, or on extraordinary occasions. The practice is *unnecessary, unnatural, and wrong*.

There are various particulars to be avoided, and several things to be done in the management of women during labour. I have only room here to state a few; and shall begin by pointing out the course to be pursued in

#### NATURAL LABOUR.

When called to a woman supposed to be in labour, we must first ascertain whether her pains are *true* or *false*; and which may be easily known by a little inquiry. If the female complains of flying, or unsettled pains about the system, occurring mostly toward evening, or during the night, and being slight or irregular, it may be taken for granted that they are spurious, or false. If these symptoms prove troublesome, an infusion or tea of *hops* may be taken; or if this is not sufficient to relieve them, or procure sleep, an anodyne may be taken, and it may be necessary also to give laxative medicines.

*True pains* may be known, by the pain being more concentrated in the lower part of the belly, through the loins and hips.

The pains now increase in regularity and force, returning every ten or fifteen minutes, and leaving the woman comparatively easy in the intervals.

When then the pains become regular and severe, there is a discharge of slimy matter, tinged with blood, known by the name of *shows*. At this period of labour it will be proper for the accoucheur, or the person who attends the labour, to examine, in order to ascertain what part of the child presents, which may be done by requesting the female to sit in a chair, or on the side of the bed, and to extend the legs, when the longest finger, dipt in sweet oil, may be passed up the vagina to the part which presents, and the sense communicated will determine the nature of the presentation. In nineteen cases out of twenty, or in almost every case, the head will be felt.

When it has been ascertained that the labour is natural, or that there are no impediments or obstacles, there will be very little more to do than superintend the person. It will be necessary to give proper instructions to the attendants to make suitable preparation or have every thing necessary in readiness.

The woman may be delivered upon a bed or a cot, as is most convenient; if a bed be used, all but the mattress should be turned back toward the head, and it should be so prepared that the moisture from the uterus, and other discharges, may not add to the discomfort of the woman. A dressed skin, oilcloth, or folded blanket, may be placed on that part of the mattress on which the body of the woman is to rest;

a coarse blanket, folded within a sheet, ought to be laid immediately beneath the patient; this is to absorb the moisture, and is to be removed after delivery. The rest of the bed clothes are to be put on the ordinary way; the woman, when she is no longer able to remain up may now lie down, with her head elevated in any position which is most desirable, and in about every case that I have ever attended, the back has been preferred, although most all writers recommend that the woman be placed upon her side. This practice is unnatural and wrong, for obvious reasons; it retards the labour pains, and prevents the accoucheur from superintending the progress of the labour. The pillow that is directed to be placed between the knees, to keep them widely separated, soon gets displaced, by the motion or change of the female, and the legs, instead of being kept apart, again come in contact, and thus the passage of the child is obstructed; but when the female is placed upon her back, this difficulty is obviated; a free passage is permitted, the pains are more effectual, the spine is better supported, and better access can be had to the parts during labour, and after the delivery of the child. In short, there is a decided advantage in this position in every respect.

The dress of women in labour should be light and simple, both to keep themselves from being overheated, and to prevent any thing from being in the way of what assistance is necessary. In addition to the means recommended, I direct a sheet to be placed around the waist of the woman, to prevent the blood, excrements, or waters, from coming in contact with the linen or clothes, and as much as possible the bed: her linen may be tucked or pushed up so far that there will be no necessity of removing it after delivery.

Every thing being thus adjusted, very little more will be necessary but to wait patiently the efforts and operations of nature. There should be few attendants in the room, and these should not whisper to each other, or express any fears or doubts. When the pains become very severe, quickly succeeding each other, the midwife or the person who officiates, may sit by the side of the woman, and upon every severe pain may keep her hand upon the parts, even though no manner of assistance can be afforded; and occasionally when the head of the child presses hard, it may be gently touched or pressed with the longest finger, in order to ascertain the parts which presents the progress of labour, as well as to be able to give from time to time suitable encouragement; not only so in the last stage of labour, the hand may be kept near the parts to know the moment when the head of the child presents; as some little assistance at this time is called for; not by supporting the perineum as some advise, but *first* to remove any obstruction which often arises from the clothes.

*Second.* To support the child in its passage, and in the interval of pains; and to keep the head from pitching downward and thus obstructing the labour.

*Third.* To detach the umbilical cord or naval string from the neck, when it incircles it, as is often the case, and which endangers the life of the child.

*Fourth.* To deliver the woman in case of hemorrhage or great flood-

ing; but at the same time there must be no further interference of art; little or nothing can be done toward facilitating the delivery of the child, except when a large bag or collection of water presents and opposes; when it may be ruptured with the longest finger, and this often affords much aid: although such is the ignorance and credulity of some women, that they suppose that almost every thing is accomplished art. A physician or midwife who watches only the process of labour, by and does little or nothing, is pronounced inhuman and cruel, and perhaps ignorant, because he is honest in not interfering with the simple and beautiful process of labour; or in other words for relying upon the great resources of nature; but such is the fashion and credulity of mankind, or rather womankind, that physicians are obliged to take the advantage of such ignorance and credulity, and regulate their proceedings accordingly. I have myself often been obliged to stand hours over a woman under pretence of aiding delivery, when in *reality* I done nothing at all. The labour would have progressed just as well had I been out of the room; but this deception I have been obliged to practice in order to satisfy ignorant, gossiping, or crying attendants. When the woman is disposed to make much noise, she should be directed to hold her breath during the pains, and aid or assist them by pressing downward as much as possible. The feet may press against the bedstead and the woman may take hold of a handkerchief and pull when a pain occurs; or she may grasp the hand of an assistant for that purpose. Sometimes from various causes, labour is very much retarded; from rigidity of the parts, the situation of the child, debility &c. When this occurs, and labour is tedious and protracted, our reliance must still be upon the powers of nature. We may however aid her efforts, by warm fomentations of *bitter herbs*, often applied to the lower part of the belly, which will prove relaxing, and will facilitate the labour: when warm diluent drinks may also be given, such as *tanzy*, *pennyroyal*, &c.

If the labour still continues stationary, we have nothing to fear provided there is a right presentation; but should the pains become feeble or lessened from flooding, debility, or any cause, or should they prove unavailing after a reasonable length of time, a dram of *spurred rye* or *ergot* may be put into a tea cup, and a gill of boiling water poured upon it, and when cool, a tablespoonful given every fifteen minutes. This will increase the pains and speedily accomplish the delivery; but it should be very seldom used, and never except when there is a right presentation, and under the most urgent circumstances.

When the head is delivered, all that is necessary to do is to support it, and wait for the pains to expel the child; except it seems livid and in danger of injury, or when the cord is twisted around the neck, when assistance must be rendered to accomplish the delivery. The face of the child must now be turned upward, the cord freed from the neck or body, and the person who assists, will pass a narrow piece of tape around the cord, or naval string, about an inch from the body, and tie as tight as it can be drawn, otherwise hemorrhage or bleeding will take place; and another must be tied at a little distance from it above, and be separated betwixt them with a pair of scissors. The child is



then to be given to the nurse. The woman must now be covered and directed to lay quiet.

#### THE AFTER BIRTH.

The after birth or placenta must be detached or removed, if nature does not accomplish it in a short time. Generally after about twenty or thirty minutes a pain is felt which may be sufficient to expel it; if it should not, and should there be no pain, gentle manual attempts may be made to remove it.

The head and breast may be elevated, and the cord taken hold by the left hand, the two first fingers may be carefully introduced into the vagina; and the anterior or forepart of the placenta, or after birth, held in this situation for some minutes, in order to excite a contraction of the uterus. The woman may now be directed to hold her breath and press down, which forces it forward, and at the same time, a little extension may be made upon the cord with the left hand, while extension is made upon the after birth with the right; this will almost invariably extract it in a few minutes. If from any cause it should not, no further attempts should be made for the present, but it must be left for a few hours, when if the natural contractions of the uterus do not remove it, it must be done in the manner recommended, with this difference, that a little more force be used. In the interval however, every thing wet must be taken away.

After the labour has been thus completed, if the woman is not too weak, one or two assistants may raise her up, and seat her upon the side of the bed or cot, while another will remove all the wet clothing, as well as the bed, and with a little warm spirits wash off the blood, water, &c., which remains; this is particularly necessary, as the omission of it may give rise to puerperal fever. I know not that any other has practiced this method, but I have found it conducive to the comfort as well as the health of the patient. Some practitioners will not suffer the woman to be removed from the situation in which she has been delivered under twelve or twenty-four hours, for fear of hemorrhage or flooding; but this is a great and dangerous error. It is impossible to tell what mischief may arise in consequence of suffering her to remain drenched in water and blood for this length of time.

After these precautions have been observed, and the bed properly prepared on which has been placed, folded blankets, skin or oilcloth covered with a warm sheet, she may be laid down, and diaper, or a suitable piece of muslin laid to the parts to absorb the lochial discharges. A bandage may be also placed around the abdomen or belly, and made moderately tight, but not enough to render her uncomfortable. A large tub previously well dried may be placed by the side of the bed, and the woman directed to place her feet in it, and when she is lifted up, every thing that is around her wet to be passed into it. It prevents the necessity of afterward washing the floor and carpet, which might prove injurious by causing a check to perspiration.

*Pretatural labour or cross births* are those in which some other part than the head presents. We cannot in general assign any rea-

son for such occurrences, nor can the woman by any sensation of her own be assured that the presentation is unusual. Apprehensions of this kind should not be indulged in. If the feet or breech present, the delivery is to be accomplished by properly accommodating the uterine of the child to the capacity of the pelvis, but no force should be employed, and though there is always some risk to the life of the infant, there is none to the mother. If the arm, shoulder, or sides of the child present, the delivery is impossible until the infant be turned, and the feet brought down into the passage. This is an operation which may be done with comparative ease and safety, if the wrong position of the infant be discovered before the waters are discharged; but otherwise both mother and child are in considerable danger. The womb closely contracting around the body of the infant when the water is drained away, and being soft and spongy in its texture it is liable to be torn if much force be employed, and then either there the child may escape into the cavity of the belly, or if it be extracted by the feet, blood may be effused from the womb into that cavity, and such injury be done as to prove fatal. Women too frequently add to the danger of the operation of turning by their restlessness and impatience, they should remember how much is at stake, and exert all their fortitude so as not to embarrass the practitioner.

The labour having been thus accomplished, it will be necessary to guard against any subsequent symptoms which may occur or take place.

## TREATMENT AFTER DELIVERY.

### AFTER PAINS.

Soon after delivery these usually come on, and with some women prove remarkably severe. The quicker the labour has been, the slighter will they prove in general. Women with their first child are seldom much troubled with after-pains; but as the uterus is thought to contract less readily after each future labour, so they are more liable to suffer from them in any succeeding delivery than in the first.

When after-pains prove so troublesome as to deprive the patient of her rest, it will be necessary to have recourse to *fomentations* or *anodynes*; red pepper and spirits simmered together a few minutes, and flannels dipped in it and applied to the belly, will generally relieve them; if it fail, apply a fomentation of *bitter herbs*, and give two teaspoonfuls of the tincture of *hops*, in milk or tea. If this fail, which I never knew, give fifty drops of laudanum. These means are to be assisted by keeping up a sufficient pressure on the belly at the same time, by means of a broad bandage.

### COSTIVENESS.

Costiveness is apt to prevail after delivery, and should always be removed by a laxative clyster, or some gentle purgative, such as *senna* and *manna*, or about an ounce of the oleum ricini, or castor oil.

## FLOODING, FLOW OF THE LOCHIA, &amp;c.

In all women a certain degree of hemorrhage usually takes place after delivery, produced by the removal of the placenta, which thereby lays bare the mouth of the blood vessels in the inside of the uterus; and this commonly continues until the womb contracts to such a size as to close them up again. The discharge for the first four or five days consists usually of florid blood, after which time it assumes a mucous appearance, and so ceases gradually.

In weak and relaxed habits it sometimes happens, that instead of saturating a cloth now and then, as is natural to all women, the blood gushes out with such rapidity and violence as to run quickly through all the bed clothes, and even to soak through the bed itself; in which case the patient will be reduced to a state of great debility, if the hemorrhage is not soon restrained. To effect this, the means recommended under the heads of Menorrhagia and Abortions must be adopted. A little alum whey, or a tea made of beth root, will soon check it. Pouring cold water on the abdomen, over the region of the uterus, from a height of four or five feet, will generally arrest the flooding immediately.

Where a suppression of the lochia ensues before the accustomed period, the discharge ought again to be promoted, if possible, by plentiful dilution, and the application of warm fomentations to the parts. Should these means prove ineffectual, gentle evacuations from the bowels must be made, and the feet bathed and perspiration promoted.

## THE MILK FEVER.

About the third or fourth day after delivery, the breasts generally become turgid and painful, from the secretion of milk which then takes place in them. When this is moderate and free, no inconvenience will be experienced; but when copious, and accompanied by any obstruction in the lactiferous tubes in consequence of the use of some repellent application, or of an exposure to cold, the breasts will then become hard, swelled, and painful, and a small fever will arise, accompanied by nausea, restlessness, pains in the head and back, and a considerable degree of thirst.

To prevent any consequences of this kind, it will always be advisable to apply the child to the breasts at a very early period after delivery. By delaying to do so immediately on the secretion of milk commencing, the breasts are not only apt to become much enlarged and distended, but the nipples are often so much retracted, that the child cannot lay hold of them without the greatest difficulty.

Where the mother's health will not admit of her suckling the child, or any other thing happens to prevent it, she should be careful to have her breasts drawn three or four times a day by some other person; and with the view of preventing a copious secretion of milk, she should use a very spare diet, keep her body perfectly open with laxative medicines, and abstain as much as possible from all liquids. This mode of proceeding will be far preferable to the use of repellent applications to dry up, or put a stop to the secretion.

If any degree of fever arises, besides confining the patient to a spare diet, keeping her very quiet, and obviating costiveness by means of cooling laxatives, bathe the feet and promote perspiration.

#### INFLAMMATION AND TUMOURS IN THE BREAST.

From exposure to cold, and neglecting to put the child at an early period to the breast, or to get them drawn by some other person, accidents of this nature happen very frequently to lying-in women.

The same practice should be adopted in this case of inflammation as in every other, and the discussion of the tumour ought to be attempted on its first appearance; the distress and pain which always attend on a suppuration of the breasts being very great. When the inflammation and swelling have been of such long standing as to show an evident tendency to suppurate, any attempt to discuss the tumour will not be advisable.

Where discussion is proper, recourse should be had at a very early period to a strict pursuance of the antiphlogistic and discutient plan. The strength is to be supported by a cool spare diet; the body is to be kept perfectly open with mild laxatives; febrile heat is to be abated by refrigerants; pain and irritation are to be allayed by sufficient doses of the *diaphoretic powders*; and the inflammation, when considerable, is to be abated by means of fermentations applied to the part, as likewise by the application of linen cloths dipped in some sedative lotion. To assist the effect of these means, the breasts are to be evacuated frequently throughout the course of the day, but more particularly the one diseased, either by the infant or some other person accustomed to the business. When they are so much swelled as not to allow of laying hold of the nipple, the proper glasses made for that purpose should be employed.

If the tumour proceeds to suppuration, notwithstanding we may have used every endeavour to prevent it, we should then assist the operations of nature by the application of emollient poultices and fomentations. As soon as the suppuration is completed, the tumour should be opened, after which it may be dressed with dry lint, and a plaster of black salve be laid over all. Should any fresh suppuration ensue, which not unfrequently happens, the same mode of treatment must be adopted, and that proper pus may be formed, the restorative cordial, with a moderate quantity of wine, will be necessary.

#### OF THE SWELLED LEG INCIDENT TO LYING-IN WOMEN.

This disease is not of very frequent occurrence, but it is occasionally met with in women a few days after delivery, and is evidently of an inflammatory nature, not only affecting the limb, but also the whole system in some degree. Some cases do occur in which the complaint is not confined to only one of the lower extremities, but occupies both of them; and it sometimes happens that after it has subsided in one limb, the other has been attacked in a similar way.



## SYMPTOMS.

The disease is marked by a firm, glossy, elastic, and painful swelling, of a white or pale colour, which pretty suddenly seizes the leg, foot, and thigh of a woman some days after her delivery of the child, and from thence extends upward to the external parts of generation, groin of the side affected, and loins. The attack is generally preceded by a sense of coldness over the whole body, with shiverings, which are succeeded by febrile heat, thirst, and an acceleration of the pulse. At first the patient experiences a stiffness, weight, and pain in the limb, which are much increased upon her making any attempt to move it or the lower portion of the body. After a time, the extremity becomes very tender to the touch, but shows no discoloration; it is, however, hotter than what is natural, and feels much fuller than usual. When pressed upon with the fingers, very little indentation takes place, and what does occur, is soon effaced. If a puncture is made into the limb, no fluid in general is discharged, but should any escape, it does not coagulate.

In the course of some days (say from six to twelve) the febrile symptoms diminish, and the swelling, heat, tension, and tenderness of the affected limb begins to abate, first in the upper part of the thigh, and afterward in the leg and foot. The febrile symptoms having gone off, the patient experiences considerable debility, and the extremity feels stiff, benumbed, heavy, and weak. It seldom returns to its original size, but on the contrary remains enlarged throughout life.

## CAUSES.

This disease is occasioned by tedious and difficult labours, exposure to cold, by getting out of bed too soon, the suppression of natural secretions, particularly the lochial discharge and flowing of the milk, or by improper treatment of the woman after delivery. Some physicians have assigned an obstruction or rupture of the lymphatic vessels of the part, as a cause of the complaint.

It seldom terminates fatally, and but very rarely is followed by any suppuration in the parts affected.

## TREATMENT AND REGIMEN.

Due regard must be paid to the stage in which the disease exists. During its first or inflammatory stage, if the febrile symptoms run high, perspiration must be promoted, the bowels must be well opened by some gentle cathartic, and then the circulation be determined to the surface of the body, and a gentle moisture of the skin promoted.

The limb may at the same time be well fomented with flannel cloths wrung out in a warm decoction of *hops* boiled in vinegar.

During the first or inflammatory stage of the disease the patient must be restricted to a cooling and low diet; but in the last, more effective nourishment should be allowed her, together with a use of wine, proportioning both to the existing degree of debility.

## FALLING OR PROJECTION OF THE WOMB.

This complaint is frequently met with among women who have had many children or frequent miscarriages, particularly those of a delicate constitution, and with lax fibres. Sometimes it is occasioned by rising too soon out of bed after delivery, and before the parts have regained their usual tone or strength. In single women, it now and then takes place from lifting some heavy weight, jumping, dancing, or some violent exertion during or soon after menstruation, and occasionally it has arisen as a consequence of the whites long continued.

The disease is usually accompanied by a sense of bearing down, as also pains in the back, groins, and private parts, which unpleasant symptoms are relieved by a horizontal position. In some cases the womb only falls lower than it ought to do, but in others it protrudes beyond the external parts. Before the tumour appears outwardly, there is sometimes a considerable discharge of a mucous fluid, but this is generally lessened when the protrusion takes place.

A falling of the womb, although a local disease, is often productive of distressing symptoms which injure the woman's general health; and these arise from the functions of the stomach and bowels being impaired, and the nervous system somewhat affected.

## TREATMENT.

In slight cases of this complaint, confining the woman a good deal to a recumbent posture upon a sofa or hair mattress, instructing her to make use of cold water, and by means of a large sponge, well wetting the back, bottom of the belly, and parts more immediately concerned, and then injecting a little of the fluid up the vagina by means of a syringe, will sometimes be sufficient, particularly if assisted by a nutritive diet and medicines of a strengthening nature, such as the *restorative cordial*. Costiveness must at the same time be guarded against, by taking, if necessary, some gentle laxative, observing however not to excite the bowels to over action, as this would be injurious.

In cases of long standing, and which resist the simple ablution and injecting with cold water, or where there is a considerable discharge of mucous or other matter, it then will be necessary to substitute some more powerful injection, such as a decoction of oak bark, in which is dissolved a little alum.

Where the womb protrudes, it ought to be replaced by laying the woman on her back, applying the fingers and thumb to the lower part of the tumour, and then by a gradual and gentle pressure carried upward into its centre, and continued, the parts are to be returned to their natural place. This being effected, a proper sized sponge is to be introduced, and the woman kept in a recumbent posture for several hours. The sponge ought to be introduced as high up the vagina as can be borne easily, and it must occasionally be removed, and well cleansed. As the parts recover their proper strength and tone, one somewhat of a smaller size should be substituted. The same bandage must be worn as recommended under the head of *fistula*.

A woman afflicted with this complaint, and who becomes pregnant,

will not require the use of the sponge after the third month, and by being very cautious after her delivery may, perhaps, be able to prevent any return of the disorder. Let her not therefore be in too great a hurry to quit her bed; and when sufficiently recovered so to do, she should avoid as much as possible for some time an erect position, and all active exercise or much exertion.

#### INFLAMMATION OF THE WOMB.

An inflammation of the womb is a dangerous and not unfrequent disease after delivery. It is known by pains in the lower part of the belly, which are greatly increased upon touching; by the tension or tightness of the parts; great weakness; change of countenance, a constant fever, with a weak and hard pulse; a slight *delirium*, or raving; sometimes incessant vomiting; a hiccup; a discharge of reddish, stinking, sharp water from the womb; an inclination to go frequently to stool; a heat, and sometimes total suppression of urine.

This must be treated like other inflammatory disorders, by *fomentations*, *purgatives*, and *sudorifics*. The drink may be thin gruel or barley water; in a cup of which, half a drachm of nitre may be dissolved and taken three or four times a day. Clysters must be frequently administered: and the belly should be fomented by hops simmered in vinegar.

#### SORE OR EXCORIATED NIPPLES.

From the constant state of moisture in which these parts are kept with those who give suck, such occurrences are very apt to happen. When excoriations do arise, these parts should be washed often with borax water, and then be sprinkled with a little powder of *elm bark*; afterward a plaster of the healing or black salve, applied. This will soon cure them. The infant may be nursed notwithstanding these applications.

#### ATROPHY FROM SUCKLING.

Some women of a delicate constitution cannot suckle long without an evident appearance of declining health, and if persisted in it might terminate in a general wasting of the body and loss of strength, or some morbid affection of the lungs. When, therefore, a woman finds her health declining, and that she gets weaker every day, with loss of appetite and langor, she ought immediately to leave off suckling; she should use a very generous diet with a moderate quantity of wine daily, and, if convenient, change the air, particularly if an inhabitant of a large and populous city or town. If the change is not found sufficiently efficacious of itself, when conjoined with a restorative diet, a course of *tonics* should be given. Gentle exercise on horseback, or in a carriage, will greatly assist the effect of these remedies.

Other diseases of women as well as children, not noticed here, are treated under their proper heads.

OF THE

## DISEASES OF CHILDREN.

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OF STILL BORN INFANTS.

Infants are sometimes born without showing any appearances of life, but where this, at the same time, is only suspended, not totally annihilated, the apparent cessation of the action of the heart and lungs may be owing to a variety of causes, such as universal weakness of the vital powers, collections of glairy matter in the windpipe, or a congestion of blood in the lungs, arising either from a long protracted labour and consequent detention of the head in the passage, or the neck of the infant being tightly encircled by the navel string or the mouth of the womb, so as to stop the circulation of the blood.

When the infant shows little or no signs of life after a tedious labour, it ought to be cleansed and then be wrapt up in flannel, having first well rubbed its chest with volatile spirits mixed with brandy, and stimulated its nostrils with volatile salts. Should these means fail in reanimating it, we may introduce a pipe or flexible catheter into its mouth, and thereby endeavour to fill the lungs with air, and make them perform the office of respiration, which plan ought to be persevered in for a considerable time. Besides these means, the infant may be immersed in a warm bath, in order that a proper degree of heat may be restored to its body. In all such cases it will be of the utmost consequence also not to detach the after birth too soon from its connexion with the womb, and not to be in a hurry to apply a ligature on the navel string. These are the first steps to be attended to.

If a portion of the glairy fluid in which the child floats in the womb gets into the windpipe or the mouth, and renders the breathing difficult or rattling, its throat ought not only to be well rinsed and washed out, but it should be placed in an attitude that will facilitate the discharge of the fluid; that is, by laying its head lower than its body. This being done, endeavours should be made to reanimate the infant; first, by inflating the lungs in the manner before mentioned, and then pressing on the chest to extricate the air, imitating thereby natural respiration.

Where there is either stupor present, or congestion in the lungs, it will be advisable to lessen the determination of the blood to the head or chest, by suffering a small quantity of blood to be lost from the divided navel string prior to putting a ligature round it. [Thomas.]

OF A RETENTION OF THE MECONIUM.

The bowels of all infants at the time of their birth are filled with a blackish coloured and viscid matter of the consistence of syrup, known



by the name of meconium. The efforts of nature are in general sufficient to dislodge and carry it off, if assisted by the mother's milk, which is always at first of a laxative quality, and therefore infants should be applied to the breast as soon as they show an inclination to suck. But should it be retained, or not sufficiently carried off, a small teaspoonful of castor oil or a little senna tea may be given, particularly if the secretion of milk in the mother's breasts is rather tardy.

#### OF ACIDITIES, FLATULENCY, AND GRIPES.

The species of food most commonly employed for the nourishment of children, being of an acescent nature, is apt to turn sour on the stomach, particularly if the body be any way disordered. Hence most of the complaints of children are accompanied with evident signs of acidity, such as flatulency, griping pains, and stools of a green colour. The child so affected becomes restless, cries much, and draws up its legs forcibly to its body, is troubled with sour belchings, vomiting or purging, and not unfrequently becomes convulsed.

New born infants until they are about three months old are apt to be affected with much distress from flatulency, or wind, or some of the causes mentioned. An infusion or tea made of the *flowers* or *leaves of catnip* will always afford relief; sometimes a few fennel seeds may be added, and a little gin. If the pain be very great, and prevents the infant from sleeping, one or two hops may be added, and the tea sweetened with loaf sugar: a few spoonfuls of it may be given.

It answers a much better purpose than *paregoric*, or any other preparation of *opium*; affording relief without producing costiveness, nausea, or any other unpleasant symptom. Sometimes however, it may become necessary to give some preparation of opium, such as *paregoric*, or syrup of poppy.

To remove offending matter, it will be sometimes necessary to give the infant about two grains of sal æratus and rhubarb, mixed in a little peppermint water, or tea and water with loaf sugar. The medicine at the same time that it occasions a gentle operation of the bowels, will tend to correct the acidity, by which means it not only removes the disease, but obviates its cause. If necessary, it should be repeated the succeeding day, being far preferable to prepared chalk and such other medicines, which, although they correct the acidity, are apt to lodge in the bowels, and occasion costiveness.

A costive habit is, indeed of itself, a frequent cause of flatulency and griping pains in infants, and when it occurs ought to be obviated, by administering the above medicine. If not found sufficiently active, fifteen or twenty drops of the *compound tincture of senna* may be added. When the griping pains are very acute, warmth may also be applied externally to the stomach and bowels, by fomenting them with bitter herbs.

In infants who are brought up by the hand, it will be necessary to pay the strictest attention to their food, and carefully to observe what seems to agree best with them. Such infants are very apt to be trou-

bled with acidity and flatulency in their stomach and bowels, and therefore it ought to be prepared fresh once or twice a day, and to have a few fennel seeds inclosed in a small bag, boiled up in whatever farinaceous substances are given to them as food. Where pap, arrow root, or the like productions do not seem to agree, the crumbs of bread mashed very fine in a little chicken broth or weak beef tea may be substituted occasionally.

#### GALLING AND EXCORIATION.

Young children are very apt to become excoriated in particular parts of the body, particularly about the groins, and wrinkles of the neck, behind the ears, and under the arms, such places being kept much moistened by urine or sweat.

These complaints prove very troublesome to children, and are, in some measure, owing to a want of due cleanliness in the mother or nurse. To prevent them, and likewise to remove them when they do occur, it will be necessary to wash the parts well with cold water once or twice a day, to change the linen often, and keep the child perfectly clean and sweet. After the child is washed and dried, the parts affected may be sprinkled with a little fine elm bark. Where the excoriation or galling is considerable, the parts, after having been washed with cold water, may be wetted with a linen rag moistened in equal parts of rectified spirit and common water, and then be dressed with fine lint spread with elder ointment.

#### OF A LOOSENESS OR PURGING.

This complaint, as well as the former, very often arises in children from the introduction of unwholesome food into the stomach, as well as the sudden disappearance of some cutaneous eruption of a critical nature; and infants who have been recently deprived of the breast are sometimes greatly disordered in their bowels by frequent watery stools, attended with gripes, and occasionally by convulsions. When this happens, restoring the child to the breast of its former nurse, or that of another, should not be neglected as the first necessary step to be taken.

A little of the neutralizing physic or mixture will soon remove this complaint.

#### TEETHING OR DENTATION.

ARBUTHNOT states that above a tenth part of infants die in teething, by symptoms proceeding from the irritation of the tender nervous parts of the jaws, occasioning inflammation, fever, convulsions, gangrenes, &c. These symptoms are in a great measure owing to the great delicacy and exquisite sensibility of the nervous system at this time of life, which is too often increased by an effeminate education. Hence it comes to pass that children who are delicately brought up, always suffer most in teething, and often fall by convulsive disorders.

About the sixth or seventh month the teeth generally begin to make their appearance; first, the *incisors*, or fore-teeth; next, the *canini*, or dog teeth; and, lastly, the *molars*, or grinders. About the seventh year there comes a new set; and about the twentieth, the two inner grinders, called *dentes sapientiæ*, the teeth of wisdom.

Children about the time of cutting their teeth, slaver much, and have generally a looseness. When the teething is difficult, especially when the dog teeth begin to make their way through the gums, the child has startings in his sleep, tumours of the gums, watchings, gripes, green stools, the thrush, fever, difficult breathing, and convulsions.

Difficult teething requires nearly the same treatment as an inflammatory disease. If the body be bound, it must be opened either by emollient clysters or gentle purgatives; as senna and manna, rhubarb, &c. The food should be light, and in small quantity; the drink plentiful, but weak and diluting, as infusions of balm, catnip flowers, &c.; to which about a third or fourth part of milk may be added.

Sydenham says, that in fevers occasioned by teething, he never found any remedy so effectual as two, three, or four drops of spirits of hartshorn in a spoonful of simple water, or other convenient vehicle, given every four hours.

When children are cutting their teeth, a small strengthening plaster may be placed between their shoulders. This generally eases the tickling cough which attends teething, and is by no means a useless application. When the teeth are cut with difficulty, it ought to be kept on during the whole time of teething. It may be enlarged as occasion requires, and ought to be renewed at least once a fortnight.

Several things have been recommended for rubbing the gums, as oils, mucilages, &c.; but from these not much is to be expected. If any thing of this kind is to be used, we would recommend a little fine honey, which may be rubbed on with the finger three or four times a-day. Children are generally at this time disposed to chew whatever they get into their hands. For this reason they ought never to be without somewhat that will yield a little to the pressure of their gums.

With regard to cutting the gums, we have seldom known it of any great benefit. In obstinate cases, however, it ought to be tried. It may be performed by a penknife or lancet.

In order to render the teething less difficult, parents ought to take care that their children's food be light and wholesome, and that their nerves be braced by sufficient exercise.

Infants, during dentition, are subject to sudden attacks of spasm about the windpipe, producing a temporary feeling of suffocation, with a crowing sound; but there is no hoarse cough. It is apt to take place suddenly at night, or when crying. It is cured by giving a combination of tincture of blood root and lobelia, and by using laxatives. The tepid bath is also useful. The gum may be cut; and if there be any tendency to a return, particularly if the child be hot, and the pulse quick, the eye heavy, and the face unusually pale, or flushed,

purgatives should be given, the feet bathed, and garlic applied to them.

#### BOWEL COMPLAINTS GENERALLY.

A great proportion of infants are cut off before they are a year old, from bowel complaints, particularly in populous cities; and most of them arise from an unnatural, and I was about to say wicked practice, of such vast numbers of persons crowding together in small, filthy, and confined apartments or houses. In this city there are instances where a dozen families occupy one tenement, and in Europe it is no doubt much worse. This alone is sufficient to account for most of the bowel and other complaints of infant children; but when we add to this the great quantities of trash or green fruit they eat, can we wonder that so many are sent to an untimely grave.

Children are always sickly in the fruit season, which may be thus accounted for: two-thirds of the fruit which comes to market in this country is really unripe; and children, not being in a condition to judge for themselves, eat whatever they can lay their hands upon, which often proves little better than a poison to their tender bowels. Servants, and others who have the care of children, should be strictly forbidden to give them any fruit without the knowledge of their parents.

In all these complaints it must be recollected that *prevention* is better than *cure*. Their diet must be attended to, and it should consist principally of milk, and at a suitable age it must be boiled with a little flower. No fruit should be given except it is fresh and ripe. Their apartments, persons, and clothing must be kept perfectly clean, and it is of the highest importance that they be placed in pure air, and if possible in the country.

As soon as the bowels become disordered, the *neutralizing cordial or mixture* must be given, as directed under the head of that preparation. This medicine will almost immediately remove the acidity of the stomach, pain in the bowels, change the appearance of the passages, and, in a word, cure the complaint.

Sometimes it may be necessary to give an infusion or tea of *raspberry leaves*, *bene plant*, &c. Foment also the bowels with bitter herbs.

#### APHTHÆ, THRUSH, OR CANKER.

Infants and children are often affected with little sore spots or eruptions about the mouth, and it usually extends from the stomach to the end of the bowels, giving rise to many painful and unpleasant symptoms.

This complaint arises from a morbid state of the stomach, and it must be treated by giving a gentle *neutralizing physic*, such as the medicine mentioned above. The mouth may be often washed with a decoction of sage and hyssop, sweetened with honey, and a little fine borax may be added.

#### CONVULSIONS.

When fits or convulsions arise from teething or any other cause, the



feet must be immediately bathed in warm ley water, and an anodyne must be administered, such as the *syrup of poppy* or *paregoric*.

Garlic should be bruised and applied to the stomach, and if there be heat of the head, spirits, rain water, and vinegar may be applied. These means must be repeated as often as fits occur: in obstinate cases it may be necessary to use a warm bath.

#### SORENESS, OR EXCORIATION OF THE NAVEL STRING OR UMBILICAL CORD.

About the time the umbilical cord separates, there is sometimes soreness and inflammation; for such symptoms, sprinkle with a powder of *slippery elm bark*, and apply the *black salve*.

#### RUPTURE, (HERNIA.)

Sometimes from crying or other causes, infants are afflicted with ruptures; when this happens the earliest attention is required.

The infant or child should be placed in a recumbent position, or on its back. Then press the tumour or protruded part back, make a compress of linen, which has been previously wet in a decoction of oak bark, apply it over the rupture, and secure it by a bandage. If this fails to keep it in its proper situation apply a *truss*.

#### TONGUE TIED, OR DIVISION OF THE FRENUM LINGUÆ.

Sometimes the frenum of the tongue is so contracted, that the child cannot nurse or suck. When this occurs, and only then, there must be a very slight incision made with a pair of scissors or lancet.

The cut must be very small and superficial, lest a blood vessel be wounded. If the child can nurse, this practice must never be resorted to. In almost every case this is an imaginary complaint; and when parents or a parent insists upon its being done, from a mistaken notion, the *back* of the *lancet* may be used, and this will satisfy them.

#### IMPERFORATED VAGINA.

Sometimes a thin membrane forms across the mouth of the vagina, which partially or wholly closes it. This is very easily divided by a lancet or a pair of scissors.

#### CLUB, CROOKED, OR DEFORMED FEET.

When children are born with this deformity, an intelligent person informs me, that a certain practitioner is always in the habit of immediately turning them at birth into a right position, and securing them with proper splints and bandages. This he says, always obviates the deformity.

#### CHOAKING.

Infants often become choaked by getting various substances into their mouth and throat. When this accident occurs, let the child be placed upon the lap of the mother or nurse, and its head turned down-

ward, while it is gently struck a few times on the back between the shoulders ; if this does not immediately remove it, let the fore finger be introduced and extract it ; should this fail, give a mild emetic.

#### VENERIAL DISEASE OF INFANTS.

It is now common in this corrupt age for infants to be born with the *venereal disease*, received in consequence of the licentious conduct of the parent or nurse, giving rise to ulcers in some parts of the body. I have known some children almost a mass of corruption from the venereal disease communicated in this manner. The poison instead of affecting the mother during pregnancy, is communicated to the infant. When such a complaint occurs, the medicine must principally be given to the mother, instead of the child. The alterative syrup must be administered, and such other medicines as recommended under the head of the venereal disease.

Who can calculate the magnitude of the vices of such men who thus entail such a loathsome and horrid disease upon their offspring. Why are crimes which dwindle into insignificance, compared with this, punished, while this is passed over without any penalty ?

I have sometimes thought from the prevalence of this vice, that half of the diseases of women and children were produced by it. Besides the miseries inflicted upon innocent children, what domestic broils and difficulties are the consequences.

The reader would be astonished if he knew how many young men are ruined by visiting houses of ill fame. It either brings thousands to an untimely grave, or cripples, or diseases them for life ; and the only method to put down this disgraceful and destructive vice, is for the municipal authorities of every county wholly to exterminate every house of the kind, by employing officers who instead of countenancing or visiting them, as is now the case, will faithfully and rigidly perform their duty. Not only so, every female who has the least regard to virtue or morals, should resolve never to associate or show the least favour to any young man, who is known or suspected of keeping company with prostitutes. Nor should any person guilty of this vice be treated with respect until he reforms. Let him be viewed in the same light as a *thief* or a *robber*, and then we may expect to see a reformation. The odium must be stamped with public disgrace and infamy.

The Jews, by their laws, were, in certain cases, forbid to have any manner of commerce with the diseased ; and, to this all wise legislators ought to have a special regard. In some countries diseased persons have actually been forbid to marry. This is an evil of a complicated kind, a natural deformity, and a political mischief ; and therefore requires a public consideration.

#### ON THE MANAGEMENT OF CHILDREN.

It is during infancy that the foundation of a good or bad constitution is generally laid ; it is therefore of importance that parents should be

well acquainted with the various causes which may injure the health of their offspring.

"It appears from the annual registers of the dead, says a writer, that almost one half of the children born in Great Britain die under twelve years of age. To many, indeed, this may appear a natural evil; but on due examination it will be found one of our own creating. Were the death of infants a natural evil, other animals would be as liable to die young as man; but this we find is by no means the case."

It may seem strange that man, notwithstanding his superior reason, should fall so short of other animals in the management of his young; but our surprise will soon cease, if we consider that brutes, guided by instinct, never err in this respect; while man, trusting solely to art, is seldom right. Were a catalogue of those infants who perish annually by art alone, exhibited to public view, it would astonish most people.

If parents are above taking care of their children, others must be employed for that purpose; these will always endeavour to recommend themselves by the appearance of extraordinary skill and address. By this means such a number of unnecessary and destructive articles have been introduced into the diet, clothing, &c., of infants, that it is no wonder so many of them perish.

It must be admitted, that most of the complaints, peculiar to infancy and childhood, are owing to the mismanagement, or ignorance of the mother or the nurse. First, as regards diet, or sustenance. Many are in the habit of pouring down various liquids and mixtures made of rich substances, and so much sweetened that the tender organs of digestion are impaired, and acidity and bowel diseases follow. Sugar, molasses, and every other article of this nature, should be avoided. No food, except the milk of the mother should be given, except absolutely necessary. Nature has designed this liquid exclusively for the nourishment of the infant, and indeed, we may say for children.

There is another precaution to be observed, which is, "never to put an infant to a wet nurse if it can possibly be avoided." Such persons are generally strangers, and they often communicate the most loathsome and fatal diseases. Besides, their milk is often rendered unwholesome by age, or other causes. This is a very unnatural practice.

Nothing can be more preposterous than a mother who thinks it below her to take care of her own child, or who is so ignorant as not to know what is proper to be done for it. If we search nature throughout, we cannot find a parallel to this. Every other animal is the nurse of its own offspring, and they thrive accordingly. Were the brutes to bring up their young by proxy, they would share the same fate with those of the human species.

We mean not, however, to impose it as a task upon every mother to suckle her own child. This, whatever speculative writers may allege, is in some cases impracticable, and would inevitably prove destructive both to the mother and child. Women of delicate constitutions, subject to hysteric fits, or other nervous affections, make very bad nurses; and these complaints are now so common, that it is rare to find a wo-

man of fashion free from them; such women, therefore, supposing them willing, are often unable to suckle their own children.

Almost every mother would be in a condition to give suck, did mankind live agreeably to nature; but whoever considers how far many mothers deviate from her dictates, will not be surprised to find some of them unable to perform that necessary office. Mothers who do not eat a sufficient quantity of solid food, nor enjoy the benefit of free air and exercise, can neither have wholesome juices themselves, nor afford proper nourishment to an infant. Hence children who are suckled by delicate women, either die young, or continue weak and sickly all their lives.

When we say that mothers are not always in a condition to suckle their own children, we would not be understood as discouraging that practice. Every mother who can, ought certainly to perform so tender and agreeable an office. But suppose it to be out of her power, she may, nevertheless, be of great service to her child. The business of nursing is by no means confined to the giving suck. To a woman who abounds with milk, this is the easiest part of it. Numberless other offices are necessary for a child, which the mother ought at least to see done. [*Buchan.*]

"A mother who abandons the fruit of her womb, says Buchan, as soon as it is born, to the sole care of an hireling, hardly deserves that name. A child, by being brought up under the mother's eye, not only secures her affection, but may reap all the advantages of a parent's care, though it be suckled by another. How can a mother be better employed than in superintending the nursery? This is at once the most delightful and important office; yet the most trivial business or insipid amusements are often preferred to it! A strong proof both of the bad taste and wrong education of modern females.

"It is indeed to be regretted that more care is not bestowed in teaching the proper management of children to those whom nature has designed for mothers. This, instead of being made the principal, is seldom considered as any part of female education. Is it any wonder, when females so educated, come to be mothers, that they should be quite ignorant of the duties belonging to that character? However strange it may appear, it is certainly true, that many mothers, and those of fashion too, are as ignorant, when they have brought a child into the world, of what is to be done for it, as the infant itself. Indeed the most ignorant of the sex are generally reckoned most knowing in the business of nursing. Hence, sensible people become the dupes of ignorance and superstition; and the nursing of children, instead of being conducted by reason, is the result of whim and caprice.

"Many advantages, says a writer, would arise to society, as well as individuals, from mothers suckling their own children. It would prevent the temptation which poor women are laid under of abandoning their children to suckle those of the rich for the sake of gain; by which means society loses many of its most useful members, and mothers become in some sense the murderers of their own offspring. I am sure I speak within the truth when I say, that not one in twenty of those children live who are thus abandoned by their mothers. For this



reason no mother should be allowed to suckle another's child till her own is either dead or fit to be weaned. A regulation of this kind would save many lives among the poorer sort, and could do no hurt to the rich, as most women who make good nurses are able to suckle two children in succession upon the same milk."

Tacitus, the celebrated Roman historian, complains greatly of the degeneracy of the Roman ladies in his time with regard to the care of their offspring. He says, that in former times the greatest women in Rome used to account it their chief glory to keep the house and attend their children; but that now the young infant was committed to the sole care of some Grecian wench, or other menial servant. We are afraid, wherever luxury and effeminacy prevail, there will be too much ground for this complaint.

Again, infants and children are often injured by improper clothing. It is customary for some nurses to wrap them in such a quantity, as to injure their health; moderation in this respect, should be observed, due regard being paid to that which is sufficient to render them comfortable.

Another very reprehensible custom is to pour down some nauseous drug, such as paregoric, Godfrey's cordial, or some other articles, every time the child begins to cry, or is fretful, by which it becomes habituated to the use of opium, and makes it necessary to increase the dose in order to produce the same effect.

Another injurious practice is to give frequently worm lozenges, (the basis of which is calomel or mercury,) upon any attack of illness, under the impression that the disorder is occasioned by worms. By this imprudent course both the health and life of the child is endangered. Therefore those who wish to bring up their children in a healthy condition, must avoid these evils, and be content to follow the simple path of nature, and common sense.

Few things tend more to the destruction of children than drenching them with drugs. That medicine may be *sometimes* necessary for children, I do not deny; but that it hurts them ten times for once it does them good, I will venture to assert. A nurse or mother, the moment her child seems to ail any thing, runs immediately to the apothecary, who throws in his powders, pills, and potions, till the poor infant is poisoned; when the child might have been restored to perfect health, by a change of diet, air, exercise, clothing, or some very easy and simple regulation.

Care must be taken to keep the bowels regular, which may be effected in most cases by the milk of the mother alone. Most of the complaints in children arise from flatulence or wind; to remove which, give common catnip or fennel seed tea, and let them drink it freely.

When children complain of pain in the stomach and bowels, give a moderate dose of vegetable physic; *senna* and *manna* is very good, and after the operation of physic, let the diet be attended to. Green fruit must be avoided, and whatever is hard of digestion. The feet should be often bathed in warm water, the bowels must be fomented with bitter herbs, and it is also necessary to give the child sufficient exercise in the open air. Nothing is more injurious to the health of

children than the confined and impure air of great cities. The most rigid attention must be paid to cleanliness. By pursuing this course, disease will be avoided, and health promoted.

#### EXERCISE OF CHILDREN.

Of all the causes which conspire to render the life of man short and miserable, none has greater influence than the want of proper exercise: healthy parents, wholesome food, and proper clothing, will avail little, where exercise is neglected. Sufficient exercise will make up for several defects in nursing: but nothing can supply the want of it. It is absolutely necessary to the health, the growth, and the strength of children.

The desire of exercise is coeval with life itself. Were this principle attended to, many diseases might be prevented. But while indolence and sedentary employments prevent two-thirds of mankind from either taking sufficient exercise themselves, or giving it to their children, what have we to expect but disease and deformity among their offspring? The rickets, so destructive to children, and other complaints are cured by it.

Arguments to show the importance of exercise might be drawn from every part of the animal economy; without exercise the circulation of the blood cannot be properly carried on, nor the different secretions duly performed; without exercise, the fluids cannot be properly prepared, nor the solids rendered strong or firm. The action of the heart, the motion of the lungs, and all the vital functions, are greatly assisted by exercise. But to point out the manner in which these effects are produced, would lead us farther into the economy of the human body than most of those for whom this treatise is intended, would be able to follow. We shall therefore only add, that when exercise is neglected, none of the animal functions can be duly performed; and when this is the case, the whole constitution must go to wreck.

A good constitution ought certainly to be our first object in the management of children. It lays a foundation for their being useful and happy in life; and whoever neglects it, not only fails in his duty to his offspring, but to society.

I have been told that in China, where the police is the best in the world, all the children are employed in the easier part of gardening and husbandry; as weeding, gathering stones off the land, and such kind of exercise.

#### ON THE FOOD OF CHILDREN.

Nature, says Buchan, not only points out the food proper for an infant, but actually prepares it. This, however, is not sufficient to prevent some who think themselves wiser than nature from attempting to bring up their children without her provision. Nothing can show the disposition which mankind have to depart from nature more than their endeavouring to bring up children without the breast. The mother's milk, or that of a healthy nurse, is unquestionably the best food for an infant. Neither art nor nature can afford a proper substitute for it.

Children may seem to thrive for a few months without the breast ; but when teething, the small pox, and other diseases incident to childhood come on, they generally perish.

A child, soon after the birth, shows an inclination to suck ; and there is no reason why it should not be gratified. It is true, the mother's milk does not always come immediately after the birth ; but this is the way to bring it ; besides, the first milk that the child can squeeze out of the breast answers the purpose of cleansing better than all the drugs in the apothecary's shop, and at the same time prevent inflammations of the breast, fevers, and other diseases incident to mothers.

If the mother or nurse has enough of milk, the child will need little or no food for the third or fourth month. It will then be proper to give it once or twice a-day, a little of some food that is easy of digestion. This will ease the mother, will accustom the child by degrees to take food, and will render the weaning both less difficult and less dangerous. All great and sudden transitions are to be avoided in nursing. For this purpose, the food of children ought not only to be simple, but to resemble, as nearly as possible, the properties of milk. Indeed, milk itself should make a principal part of their food, not only before they are weaned but for some time after.

Next to milk, we would recommend good light bread. Bread may be given to a child as soon as it shows an inclination to chew ; and it may at all times be allowed as much plain bread as it will eat. The very chewing of bread will promote the cutting of the teeth, and the discharge of saliva, while, by mixing with the nurse's milk in the stomach, it will afford an excellent nourishment. Children discover an early inclination to chew whatever is put into their hands. Parents observe the inclination, but generally mistake the object. Instead of giving the child something which may at once exercise its gums and afford it nourishment, they commonly put into its hands a piece of hard metal, or impenetrable substance. A crust of bread is the best gum-stick. It not only answers the purpose better than any thing else, but has the additional properties of nourishing the child, and carrying the saliva down into the stomach, which is too valuable a liquor to be lost.

Bread, besides being used dry, may be many ways prepared into food for children. One of the best methods is to boil it in water, afterward pouring the water off, and mixing with the bread a proper quantity of new milk unboiled. Milk is both more wholesome and nourishing this way than boiled, and is less apt to occasion costiveness. For a child farther advanced, bread may be mixed in veal or chicken broth, made into puddings. Bread is proper food for children at all times, provided it be plain, made of wholesome grain, and well fermented ; but when enriched with fruits, sugars, or such things, it becomes very unwholesome.

It is soon enough to allow children animal food when they have got teeth to eat it. They should never taste it till after they are weaned, and even then they ought to use it sparingly. Indeed, when children live wholly on vegetable food, it is apt to sour on their stomachs ; but,

on the other hand, too much flesh heats the body, and occasions fevers and other inflammatory diseases. This plainly points out a due mixture of animal and vegetable food as most proper for children.

#### THE INJURIOUS EFFECTS OF UNWHOLESOME AIR UPON CHILDREN.

Few things says an experienced physician, prove more destructive to children than confined or unwholesome air. Impure air is rendered so extremely pernicious, that it becomes a poison to infants.

Want of wholesome air is likewise destructive to many of the children born in great towns. There the poorer sort of inhabitants live in low, dirty, confined houses, to which the fresh air has scarcely any access. Though grown people, who are hardy and robust, may live in such situations, yet they generally prove fatal to their offspring, few of whom arrive at maturity, and those who do are weak and deformed. As such people are not in a condition to carry their children abroad into the open air, we must lay our account with losing the greater part of them. But the rich have not this excuse. It is their business to see that their children be daily carried abroad, and that they be kept in the open air for a sufficient time. This will always succeed better if the mother goes along with them. Servants are often negligent in these matters, and allow a child to sit or lie on the damp ground, instead of leading or carrying it about. The mother surely needs air as well as her children; and how can she be better employed than in attending them?

A very bad custom prevails, of making children sleep in small apartments, or crowding two or three beds into one chamber. Instead of this, the nursery ought always to be the largest and best aired room in the house. When children are confined in small apartments, the air not only becomes unwholesome, but the heat relaxes their solids, renders them delicate, and disposes them to colds and many other disorders. Nor is the custom of wrapping them too close in cradles less pernicious. One would think that nurses were afraid lest children should suffer by breathing free air, as many of them actually cover the child's face while asleep, and others wrap a covering over the whole cradle, by which means the child is forced to breathe the same air over and over all the time it sleeps. [*Buchan.*]

#### CLOTHING OF CHILDREN, AND CLEANLINESS.

It is too common a practice with nurses and mothers to swathe very young children with flannel bandages and stays, the consequences of which are, that they either become very susceptible to the impressions made by the external air when they are left off, or deformity takes place.

The best rule that can be observed with respect to the dressing of a child, is that it be encumbered with no more clothes than are necessary to keep it warm, in every instance proportioning these to the temperature of the atmosphere, the season of the year and climate; that they sit easy and sufficiently loose on its body, so as not to compress and confine any part of it; that they are composed of articles that are



light, soft, and warm, being at the same time simple and without complication, and that they be changed frequently, or as often as they happen to be wetted by the urine of the child. Wet clothes not only fret and gall the tender skin of infants, but also give them a strong unpleasant smell, and not unfrequently occasion eruptive disorders; whereas cleanliness in the clothing of an infant, together with proper ablutions with tepid or cold water, and frictions with the hand over every part of the body after it has been thus purified, each day previous to dressing it, will greatly tend to preserve it in good health. In every part of the dress of an infant, as well as in the application of its napkins, tape should be substituted instead of pins.

#### NURSES.

Parents who are obliged to employ nurses should be very particular in employing such as are free from any complaint, unquestionable references as to character should be given. Her milk should not be old, and she should be clean, her person and dress prudent and careful, and her nursing should be under the immediate control or superintendence of the mother or parents.

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All diseases of women and children not noticed in the preceding chapters will be found under the appropriate heads; such as rickets, worms, dropsy in the head, croup, &c.

# NOTES

## ON

# C H O L E R A .

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### Note 1.

*Annual bill of mortality.*—We have obtained a sight of the annual bill of mortality for New-York, during the year 1832, which was presented to the Common Council on Monday evening, January 21st, 1833, and is now in the process of publication, from which we derive the following particulars :

The whole number of deaths during the year, as will be seen below, was *ten thousand three hundred and fifty-nine* ; being three thousand nine hundred and ninety-six more than ever occurred in the city before, in any one year. This extraordinary increase of mortality is mainly attributable to the ravages of Malignant Cholera, which carried off no less than three thousand five hundred and fifteen individuals, all in the months of July, August, September, and October.

Of the whole number, (10,359) there died of

Abscess,	5
Apoplexy,	81
Asphyxia,	10
Asthma,	8
Bilious dysentery,	6
Burned or scalded,	29
Cancer,	15
Caries,	3
Casualty,	72
Catarrh,	5
Childbed,	55
Chlorosis,	3
Cholera,	3515
Cholera morbus,	93
Cholic,	7
Compression of the brain,	1
Consumption,	1415
Convulsions,	501
Contusion,	2
Cramp in the stomach,	16
Diabetes,	1
Diarrhœa,	104
Drinking cold water,	3

Dropsy, . . . . .	130
Dropsy in the chest, . . . . .	43
Dropsy in the head, . . . . .	344
Drowned, . . . . .	65
Dysentery, . . . . .	130
Dyspepsia, . . . . .	8
Epilepsy, . . . . .	11
Erysipelas, . . . . .	13
Fever, . . . . .	80
Bilious fever, . . . . .	31
Bilious remittent, . . . . .	8
Hectic, . . . . .	3
Inflammatory, . . . . .	3
Intermittent, . . . . .	7
Puerpal, . . . . .	5
Remittent, . . . . .	27
Scarlet, . . . . .	221
Typhus, . . . . .	84
Flux infantile, . . . . .	334
Fracture, . . . . .	2
Frozen, . . . . .	5
Gout, . . . . .	2
Gravel, . . . . .	2
Hemorrhage, . . . . .	10
Hemoptysis, . . . . .	5
Hives or croup, . . . . .	179
Hysteria, . . . . .	2
Jaundice, . . . . .	14
Inflammation of the bowels, : : : : : :	196
Inflammation in the brain, : : : : : :	99
Inflammation in the chest, : : : : : :	77
Inflammation in the liver, : : : : : :	44
Inflammation in the stomach, : : : : : :	30
Influenza, : : : : : :	33
Insanity, : : : : : :	4
Intemperance, : : : : : :	119
Killed or murdered, : : : : : :	3
Lock jaw, : : : : : :	3
Lumber abscess, : : : : : :	2
Marasmus, : : : : : :	177
Measles, : : : : : :	290
Mortification, : : : : : :	23
Nervous disease, : : : : : :	2
Old age, : : : : : :	154
Palsy, : : : : : :	36
Peripneumony, : : : : : :	234
Pleurisy, : : : : : :	22
Pneumonia typhodes, : : : : : :	57
Quinsy, : : : : : :	2
Rheumatism, : : : : : :	7

Rupture, :	:	:	:	:	:	:	:	:	:	7
Schirrus of the liver, :	:	:	:	:	:	:	:	:	:	37
Scrofula or king's evil, :	:	:	:	:	:	:	:	:	:	17
Small pox, :	:	:	:	:	:	:	:	:	:	89
Sore throat, :	:	:	:	:	:	:	:	:	:	22
Spasm, :	:	:	:	:	:	:	:	:	:	13
Spina bifida, :	:	:	:	:	:	:	:	:	:	5
Sprue, :	:	:	:	:	:	:	:	:	:	32
Still-born, :	:	:	:	:	:	:	:	:	:	384
Stranguary, :	:	:	:	:	:	:	:	:	:	1
Sudden death, :	:	:	:	:	:	:	:	:	:	2
Suicide, :	:	:	:	:	:	:	:	:	:	29
Syphilis, :	:	:	:	:	:	:	:	:	:	4
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Vomiting blood, :	:	:	:	:	:	:	:	:	:	1
Ulcer, :	:	:	:	:	:	:	:	:	:	1
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Whooping cough, :	:	:	:	:	:	:	:	:	:	63
Worms, :	:	:	:	:	:	:	:	:	:	41
Inflammation of the bladder, :	:	:	:	:	:	:	:	:	:	4

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Total, 10,359.

The number of deaths in January was 564; February, 735; March, 545; April, 478; May, 515; June, 410; July, 2,467,—of which by Cholera, 1,797; August, 2,206—of which by Cholera, 1,202; September, 1,064—of which by Cholera, 451; October, 586—of which by Cholera, 63; November, 400; December, 389. Total, 10,359.

Of the age of one year or under, there died 1,922; between one and two years, 830; between two and five years, 965; five and ten years, 450; ten and twenty, 433; twenty and thirty, 1,397; thirty and forty, 1,617; forty and fifty, 1,142; fifty and sixty, 705; sixty and seventy, 489; seventy and eighty, 273; eighty and ninety, 109; ninety and a hundred, 25; over a hundred, 2. Total, 10,359.

It will be observed that the proportion of deaths in middle age is unusually large: the Cholera having selected the greater part of its victims from that description of persons.

Of the whole number deceased, 3,200 were men, 2,694 women, 2,463 boys, and 2,092 girls. Total males, 5,663; females, 4,696. Excess of males, 967.

Proportion of deaths to the whole population, rating it at 220,000, 1 in 21 1-4. In 1831, rating the population at 210,000, 1 in 34 1-2.

The number of deaths in 1831 was 6,353: in 1830, 5,537: in 1829, 4,094; in 1828, 5,181: in 1827, the same; in 1826, 4,973.

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*Note 2.*

SIR—I request permission through your extensively circulated paper, to convey to the public my opinion as to the nature, and my suc-



cessful practice in the cure of cholera morbus, for more than thirty years, with uniform success.

The disease is introduced by causes too well known, and shows itself at first by violent pains from the stricture of the gall duct, and is afterward kept up by the irritability of the bowels, brought on by the excoriation of the internal coat, from the acrid or scalding nature of the bile when first expelled the gall bag. This irritation keeps up the disease till nature recovers or sinks.

I never use calomel, because I have a more certain, safe, and speedy remedy, that produces an almost instantaneous relief; calomel relieves by inducing a more copious secretion of means to defend the membrane from excessive irritation, where it succeeds: whilst the remedy I recommend, affords a tone of firmness to the membrane, a smoothness of surface that defends it from the action of the bile, and removes excessive irritation; by which means the disease goes off as soon as the gall bladder is emptied of its excessive irritative contents, which is very soon accomplished, as from three to five or six doses complete the cure. The following is one of the proofs of my assertion.

I was surgeon of the *Dolphin* in the year 1825, between the 17th and 26th of July in that year; I had two hundred and sixty-four cases of cholera morbus, from which, with the exception of sixteen being kept under treatment for three days, four patients demanding attention for four days, and three for five days, every patient was restored within the space of fifty hours: one who had been previously ill, demanded longer attention.

I persuaded the chief mate to take a dose of the remedy before the healthy remaining part of the ship's company to induce them to follow his example; they all complied, and to the best of my recollection not one of them had occasion to trouble me from illness.

The remedy I gave was—one drachm of nitrous acid, (not nitric, that has foiled me,) one ounce of peppermint water or camphor mixture, and forty drops of tincture of opium. A fourth part every three or four hours in a cupful of thin gruel. The body should be covered with a succession of hot clothes dry; bottles of hot water to the feet, if they can be obtained; constant and small sippings of finely strained gruel, or sago, or tapioca; no spirit, no wine, no fermented liquors till quite restored. I am your obedient humble servant,

THOMAS HOPE, *Surgeon*.

### *Note 3.*

It is remarkable, that even now, January 21st, 1833, bowel complaints are very prevalent, particularly the cholera morbus; and which very much resembles the Spasmodic Cholera, showing evidently, that the atmosphere is charged with the poison, and that nothing is wanting but some exciting cause to bring it into action.

I have just this moment been to visit a patient who has had a very severe attack of the complaint, vomiting and purging, the discharges consisting of a fluid resembling "dirty rice water."

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